AFFDL-TR-79-3036 Volume II





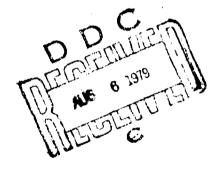
IMPROVED METHODS FOR PREDICTING SPECTRUM LOADING EFFECTS — PHASE I REPORT

Volume II - Test Data

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J. H. Stolpestad

Rockwell International Corporation Lcs Angeles Division P. O. Box 92098 Los Angeles, California 90009



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Prepared for

AIR FORCE FLIGHT DYNAMICS LABORATORY
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Air Force Systems Command
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FOR THE COMMANDER

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Chief, Structures & Dynamics Division

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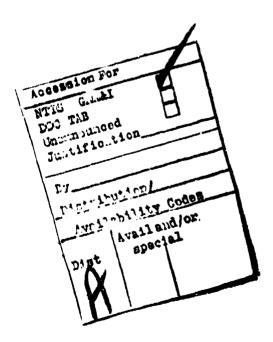
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of three levels of crack growth analysis used for detail design, aircraft tracking, and preliminary design have been established. data generated from the test program has been summarized.	individual Crack growth

FOREWORD

Volume II of this report presents the test results of phase I - identification of controlling damage parameters of a research program entitled "Improved Methods for Predicting Spectrum Loading Effects". This program is being administrated by the Air Force Flight Dynamics Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio, under contract F33615-77-C-3121. Mr. Robert M. Engle (AFFDL/FBE) is the air Force project engineer.

The test data included in this volume were performed primarily by personnel from the Fatigue and Fracture Mechanics Group, Dynamics Technology, and Structures Systems, supervised by George E. Fitch, Jr., Supervisor, Joseph S. Rosenthat, Manager, and Dr. George P. Haviland, Director. The program manager and principal investigator is James B. Chang. The deputy program manager is John A. Stolpestad. Principal contributors to the test program include Ko-Wei Liu, Fatigue and Fracture Mechanics, Wally Ferentz, Structural Testing Laboratory, and Howard Ross, Manufacturing Engineering.



SUMMARY

An experimental and analytical investigation is being performed under contract F33615-77-C-3121 with the objective of upgrading crack-growth prediction methodology as it is impacted by spectrum loading effects. This report deals with the phase I studies of this program. Three interrelated tasks have been performed in phase I. The first task included an evaluation of the state-of-the-art of currently used methods for analyzing fatigue crack-growth behavior under flight-by-flight loading. The second task dealt with the development of a general methodology for characterizing flight-by-flight loading such that the requirement of a cycle-by-cycle crack-growth analysis could be eliminated. The third task called for the definition of guidelines for the development of crack-growth analyses for preliminary design, for detail design, and for individual aircraft tracking.

To aid in formulation of methodology for the second task, an experimental testing program was conducted. This volume contains tabulations and plots of basic data collected during this experimental program. Data tabulations are presented for 106 tests ranging in complexity from simple baseline da/dN tests to sophisticated randomized cycle-by-cycle fighter and transport spectrum tests. In between these extremes were test groups that studied the influence of single and periodic overloads and underloads, multiple overloads and underloads, and simplified flight spectra. The text preceding the data provides a discussion of test purposes, specimen design and fabrication, testing procedures, and data presentation.

GENERAL

A portion of the phase I effort of the INPSLE program called for an evaluation of the state-of-the-art of present methods for analyzing fatigue crack growth under flight-by-flight loading. The results and conclusions of this study are documented in Volume I of this report. Following the completion of this study, it was planned that a general methodology would be developed for characterizing flight-by-flight loading, eliminating the necessity for a cycle-by-cycle analysis while predicting equivalent crack growth behavior. To aid in the formulation of this methodology, an experimental program was planned to study the significant stress parameters which control the rate of damage on a flight-by-flight basis. The following paragraphs describe the approach taken in planning and carrying out this test program, and present tabulations and graphical presentations of the test data.

TEST DESCRIPTION

The methodology development test program consisted of a series of eight baseline tests to develop basic fatigue crack growth rate properties, plus

five groups of methodology development test specimens varying in complexity from simple constant-amplitude tests to complex random cycle-by-cycle spectrum tests.

The baseline tests (see Table 1) applied a common maximum stress of 20 ksi with variations in the R-factor ranging + 0.70 to -0.30. One special static test was conducted on a precracked specimen to verify the fracture toughness of the material. In this test, the calculated stress intensity factor at failure using the plane strain stress intensity formula, $K_{I} = \sigma \sqrt{IIC} \times W_{C}$, was 49,000 psi \sqrt{inch} , an acceptable value for this material.

The methodology development tests consisted of the following five groups:

Group I - Constant-amplitude loads - 10 tests (Table 10)

Group II - Single or periodical overload/underload - 20 tests (Table 21)

Group III - Multiple overload/underload - 30 tests (Table 42)

Group IV - Simplified flight spectrum - 25 tests (Table 73)

Group V - Random cycle-by-cycle spectrum - 13 tests (Tables 99, 103, 107, 110, and 114)

Details of the loading conditions for each test are shown in the referenced tables. The selected magnitudes of the maximum stresses, the stress ratios, and the number of cycles for each test segment were predicated on design limit load levels for typical fighter and transport aircraft.

MATERIALS AND SPECIMENS

All tests were performed on plates from a single heat of 2219-T851 aluminum alloy, specification QQ-A-250/30. The plate material was purchased from Ti-Con Industries, Huntington Beach, California. A description of the material, including the chemical and physical properties, follows:

2219-T851 aluminum QQ-A-250/30, 1/4 x 48 x 144 inches

Mill source: Reynolds

				Chemical	properti	es			
Heat no.	A1	Mg	Mn	Zn	Ar	Si	Fe	Cu	Ni
743025D		0.02	0.20	0.02		0.05	0.10	5.8 6.8	
	Cr	Ti	Th	Ca	с	S	P	Others	
•		0.20				•		Each 0.05 max Total	
	0.10	. 30				•			

	Physical pr	roperties	
Heat no.	Yield strength	Tensile strength	% Elong.
743025D	46,000 min (psi)	62,000 min (psi)	8 min

The physical properties were verified by a tensile coupon test at Rockwell during which a load/strain curve was recorded. (See Figure 1.) Yield strength, ultimate strength, and elongation properties exceeded minimum requirements.

The test specimen blanks were machined from two full plates and a small portion of a third plate. Each blank was uniquely serialized to identify the plate from which it came and its location within that plate. (See Figure 2.) The blanks were then finish-machined to the configuration of Figure 3. All test section thicknesses were 0.250 inch, and the longitudinal grain was oriiented parallel to the loading direction. The center notches were installed by EDM Laboratories, Garden Grove, California, employing the wire electrical discharge machining process. The center-notch configuration was selected in order to minimize the geometric considerations in the calculation of the stress intensity factor.

TESTING PROCEDURES

All tests were conducted in the Rockwell LAD Structures Test Laboratory, employing the 500 and 1,500 K MTS fatigue testing systems. An MTS load tower (Figure 4) consists of a rigid load frame and incorporates a dual bridge load cell and hydraulic actuator. Applied loads are controlled through a closed loop servo system and load programmer test system, with load cells and servo uses a digital PDP 8E computer for program control. All tests except the randomized cycle-by-cycle spectrum tests were controlled by the MTS system. The randomized tests were controlled by the Datum servo system 70, a computercontrolled fatigue test system selected for this application because of its capability to handle much longer waveforms than is possible with the integral MTS computer equipment. As used on the random spectrum tests, the Datum system acts as a waveform generator and provides a command signal output to the MTS servo controller. The MTS system returns a load cell feedback signal to the Datum system which was used for "desired versus actual load" error checking. The only other interfaces between the two systems are discrete signals providing test control, including hold, run, and ramp on servo controller error detection. A schematic of the interrelationship of the MTS and Datum 70 systems is shown in Figure 5. Loads were transmitted from the test machine head to the specimens through hydraulically actuated friction grips.

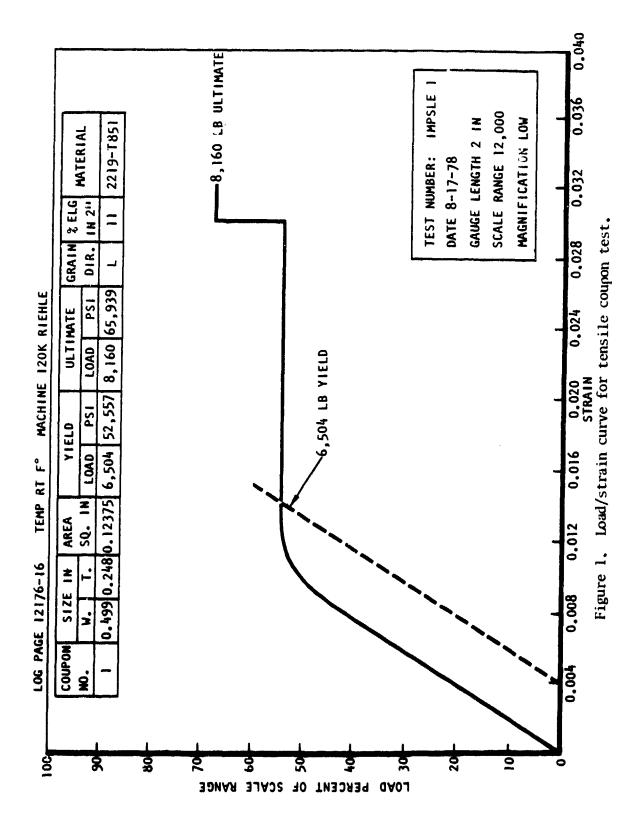
In most cases, the EDM crack starter slot in the specimen was precracked to produce an initial crack length, 2a, of 0.30 inch approximately. Precracking was performed under constant-amplitude cycling at an R-factor of zero and with maximum cyclic stresses of 8 or 10 ksi, but in no case exceeding the maximum stress applied in the subsequent test. All tests were run in ambient laboratory air at room temperature. The cyclic rate for constant amplitude testing was approximately 6 Hz, and for spectrum testing between 4 and 6 Hz, depending on such factors as load level, load range, and the presence of compression loads. Crack growth was measured by visual optics reading from precision scales attached to each side of the specimen adjacent to the EDM slot. Measurements were made and recorded after approximately each 0.05-inch increment of growth. The long edges of the specimens were restrained against lateral motion when subjected to compression loads.

DATA TABULATIONS AND PLOTS

The raw data tabulations were initially made in laboratory log books. For the dual purposes of data reduction and of presentation in this report, the data were coded into program PLOTRATE, resulting in a computer printout of the data for each test together with a graphical figure of crack length versus applied cycles. Data tabulations and plots in this report are copies of the computer output. Figure 6 shows a typical data tabulation together with explanatory remarks concerning the K-max and delta K columns, the numbers in which are inappropriate for all except the constant amplitude baseline tests. The remaining columns are correct and pertinent to all other tests.

The data tabulations are organized by test groups as follows:

		Test Description	Test D	at a
Group	Type load	Table	Tables	Figures
Baseline	Constant amplitude (for da/dN)	1	2-9	7-14
I	Constant amplitude	10	11-20	15-24
II	Single or periodical overload/ underload	21	22-41	25-44
III	Multiple overload/underload	42	43-72	45-74
IV	Simplified flight spectrum	73	74-98	75-99
v	Random fighter spectrum, air-to- air mission	99	100-1)2	100-102
V	Random fighter spectrum, air-to- ground mission	103	104-106	103-105
V	Random fighter spectrum, instr & nav mission	107	108-109	106-107
V	Random fighter spectrum, composite mission	110	111-113	108-110
V	Random transport spectrum, composite mission	114	115-116	111-112



MATERIAL: 2219-T851 AL ALLOY PLATE, QQ-A-250/30

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MI-1-7	MI-1-14	MI-1-21	MI-1-28	MI-1-35	MI-1-42	M1-1-49		H1-2-56	M1-2-63	M1-2-70	M1-2-77	M1-2-84	M1-2-91	M1-2-98		
H1-1-6	M1-1-13	MI-1-20	MI-1-27	H1-1-34	14-1-14	M1-1-48		H1-2-55	M1-2-62	M1-2-69	M1-2-76	M1-2-83	M1-2-90	M1-2-97		
H1-1-5	MI-1-12	61-1-1H	MI-1-26	H1-1-33	M1-1-40	M1-1-47		M1-2-54	M1-2-61	M1-2-68	M1-2-75	M1-2-82	H1-2-89	H1-2-96		**
4-1-1M	11-1-1H	MI-1-18	MI-1-25	MI-1-32	H1-1-39	HI-1-46		MI-2-53	M1-2-60	M1-2-67	M1-2-74	M1-2-81	M1-2-88	H1-2-95		-
H1-1-3	M1-1-10	M1-1-17	M1-1-24	M1-1-31	M1-1-38	M1-1-45	vo.	M1-2-52	M1-2-59	MI-2-66	HI-2-73	M1-2-80	MI-2-87	H1-2-94		
M1-1-2	HI-I-9	M1-1-16	MI-1-23	MI-1-30	M1-1-37	M1-1-44	-18 ± 16	M1-2-51	M1-2-58	M1-2-65	M1-2-72	M:-2-79	M1-2-86	MI-2-93		
M1-1-1	Mi-1-8	N1-1-15	MI-1-22	MI-1-29	MI-1-36	MI-1-43		M1-2-50	MI-2-57	M1-2-64	MI-2-71	M1-2-78	MI-2-85	MI-2-92		
						6 1/4 + 1/32	-	IYPICAL AS-SAWED	6 1/4 REF	Sef /				2.250 REF	(ST0CK)	/+
								TYPICAL SPECIMEN		30	\		\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>			

Figure 2. Test specimen location and identification system.

SPECIMEN NUMBER

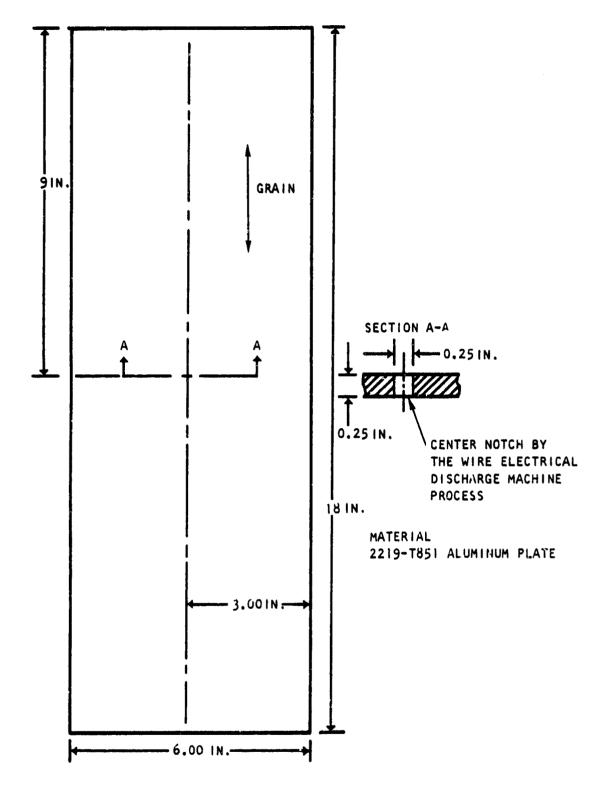
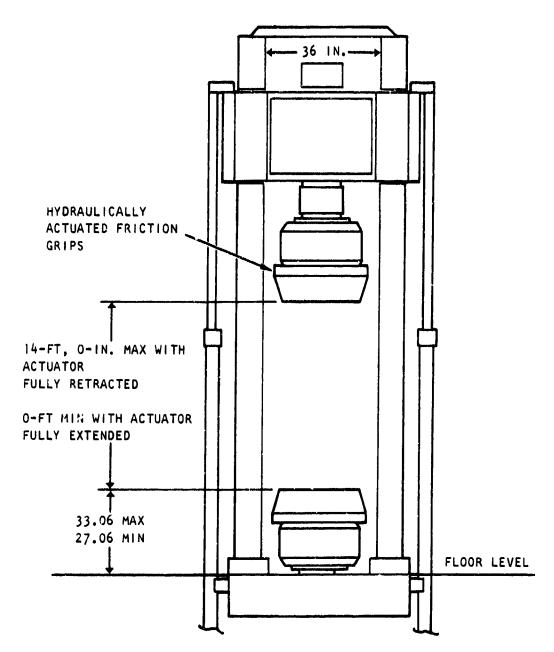


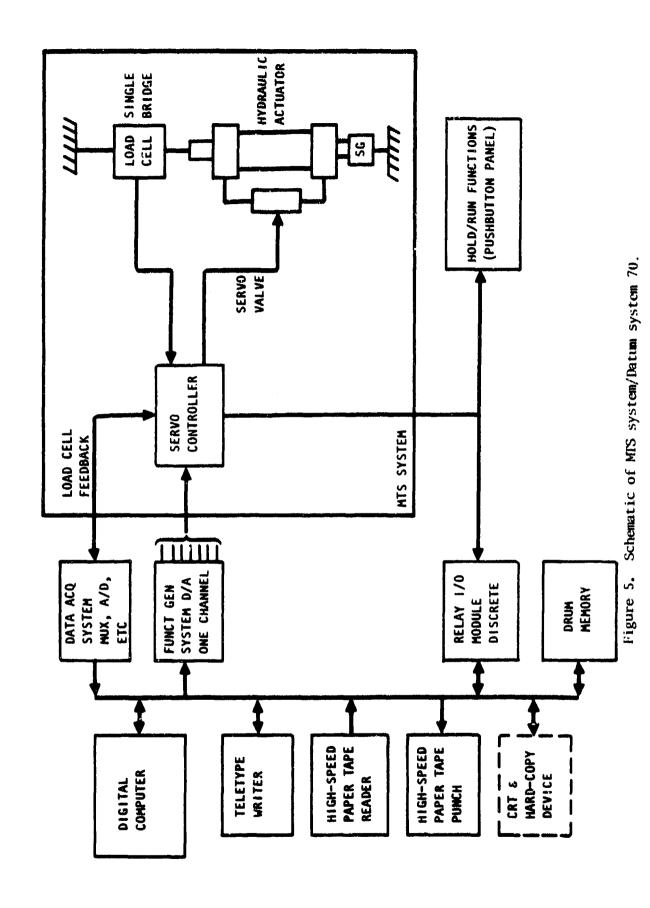
Figure 3. Test specimen configuration.



MAXIMUM FATIGUE LOAD: + 500,000 LB

MAXIMUM STATIC LOAD: 600,000-LB TENSION 600,000-LB COMPRESSION

Figure 4. 500-KIP materials test system.



SPECIMEN NO.: MI-2-F" BASELINE, 10 KSI STRESS

	O.15KIPS	FRAXE 15.	15.00KIPS	R= 0.610	TEST F	FREQ= 6.000HZ.	000нг.		
ENVIRONMENT CONDITION:	COND 113 5141	RECOM AMBIENT	=						
ě.	CYCLES	L IMEASURED)	A (REGRESSION)	ION) MULT.	CORR.	COEFF	K-MAX	DELTA K	DA/DN
	•	0.317	3.317		1.00000	0	1.67	2.00	1-2506-07
~	5000-	0.312	0.324		0.997810	0	7.14	7.07	4-167E-07
٠	100001	0.37:	0.337		620966-0	-	7.29	7.22	1-4 USE-C6
+	15000.	(i.3).5	0.354		0.995179	*	7.47	7.40	1.7056-06
· -	200002	0.375	0.373		0.998334		7.68	2.60	2.0276-06
•	25 000.	0.355	0.394		0.997320		3.69	7.01	2-339E-C6
_	30000	0.415	0.417		0.99860	•	8.12	3.8	2.696E-06
•	35000.	(45	0.445		0.999693	-	8.39	6.31	3-1346-06
•	40000	034.0	094.0		6996660	•	6.71	8.63	3-625E-06
2	45000°	0.520	0.520		696566-0	•	4.67	95-0	4.098E-06
11	20006	0.563	0.562		0.959954	-	9.45	4.35	4.527£-06
15	55000	0.610	0.610		0.999919	-	9.85	9.35	4-971E-66
13	• 0000 •	099.0	0.661		0.999950	•	10.26	10.16	5.44%-06
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							but basel	but baseline tests	

Figure 6. Typical data tabulation.

TABLE 1. BASELINE TESTS FOR FATIGUE CRACK GROWTH RATE DATA

		Stress	(ksi)		
Test No.	Specimen No.	Mex	Min	R-Factor	Remarks
B-1-1	MI-1-47	20	0.2	+0.01	Conventional EDM
B-1-2	MI-1-14	20	4	+0.20	Conventional EDM
B-2	MI-2-64	20	6	+0.30	Conventional EDM
B-3	MI-1-26	20	14	+0.70	Conventional EDM
B-4	MI-2-90	20	-6	-0.30	Conventional EDM
B-5	MI-1-8	20	-2	-0.10	Conventional EDM
B-6-1	MI - 2 - 88	20	0.2	+0.01	Slot by wire EDM method
B-6-2	MI - 1 - 31	20	0.2	+0.01	Conventional EDM
Special	MI -2 - 89	10	0.1	+0.01	da/dN growth to 2c = 0.75, then static load to failure

NOTE:

- All tests in ambient laboratory air.
 Maximum cyclic rate 360 cpm.
 Lateral restraints used in compression load tests.

TABLE 2. DATA TABULATION FOR TEST B-1-1

SPECIMEN NO.: 8-1-1 BASELIME, 20 ASI STRESS

	TEST FREQ= 6.00 HZ.	
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	R= 0.010	
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9	_	
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	30	ROOM AMBIENT
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20	PHAX=	ğ
6.	•	
b= 6.250 In.	Ŋ	110
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2	6.3	5
CCT SPECIMEN	PRIM. 0.3 KIPS	BIVITAGNENT CONDITIONS
3	1	2
123	Ē	

2.6056-05	3-061E-05	5-252E-05	401-95-01-4	7.0606-05	8 - 2 2 2 6 - 0 E	4.20C-0C	2000			1 - 50 - 50 - CO	1-457E-84	2-2276-04	2 0015 04	31000		5.4446-04		100000	1.146-03
DELTA K. 18-96	19.10	20.63	21.86	22.94	24.26	25.65	27.22	7	P1089	29-22	30.39	31.76	11.72		19.00	34.45	77 57	43047	21.13
K-MX 16.26	19.37	20.05	22.08	23.22	24.51	25.86	27.20	24.42	1	16.62	30.49	32.06	34.06	26.02	22.26	39.24	41.10	4445	51.49
MJLT. CORR. COEFF 0.995528	0.997529	0.996349	0.992515	0.996719	0.997935	049864-0	6.998452	0.999654		40C444-0	0.996617	006946.0	756266-0	6.000	AC 3 00 4 0	0.992581	0.064070		0.998516
A (REGRESSION) 0.526	0.550	0-641	0.761	5.83 8	626*0	1.02 s	1.151	1.223	36.4	1000	1.463	1.515	1.676	1.833		2-0%	2.463		210 %
A(MEASURED) 0.525	039.0	0.676	0.765	0.84C	0.933	1.020	1.145	1.275	3.7		374.1	1.515	1.675	1.860		のおり・フ	2.35		3.615
CWELES	300	2002	2760	3306.	3561.	450%	5106.	\$606.	5704.			9300	6656.	6956.	236.5	-96	7556.	7064	•
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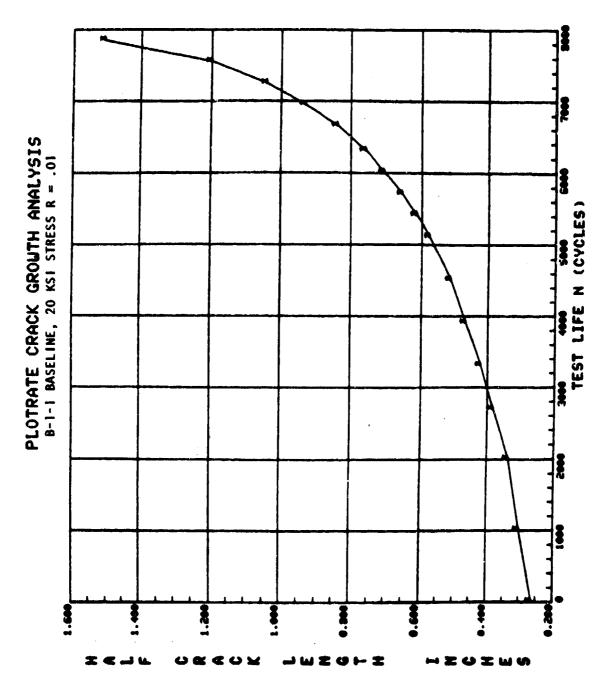


Figure 7. Crack growth curve for test B-1-1.

DATA TABULATION FOR TEST B-1-2 TABLE 3.

1. The ...

B-1-2 BASELINE, STRESS = +4 TO +20 KSI SPECINEN NELS

PMAXE		30.0 KIPS A=	0.200 REST FR	FREGE 6-	6-00 HZ.	
ROOM	M AMETENT					
	ED)	A (REGRESSION)	MULT. CGRA.	CJEFF	K-MAX	DELTA K
-	0-360	o•.360	0.599961	_	15.07	12.06
_	0.426	21475	604656.0	•	16.26	i 3.01
•	0-4-0	0.466	0.957726		17.59	14.07
9	0.540	0.564	0.99376	•	14.92	15-14
_	0.630	0.628	E408460	•	19.95	15.95
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•	0-760	0.766	0.493615	•	22.16	17.73
0	J-84C	0.840	079676"0	9	23.25	18-60
-	0-6-0	6.915	0.54251	•	24.31	19.45
J	0.96.0	0.962	0.997782	~	25.24	20-13
~	.050	1.0.1	141864.0	~	26.26	10-17
_	-135	1-135	14L664-0	٠	\$ 7 · L 5	21.33
_	1.220	1.220	074445.0	a	21.39	22.71
-	300	1.302	751656"0	4	29.43	23.54
_	375	1.336	0.95956	40	30.29	24.23
_	15	1:4	£11665.0	41	31.21	24.97
	3.5.5	1-525	10+565-0	_	32.43	12.57
-	519-1	1-614	599866-0	.	33.30	26.64
•	56.5	1.692	747656°O	.*	34.25	27.40
-	1.775	1.761	0.699501	_	55.33	28.23
-	049	1-661	6.959151	~	36.55	25.24
-	. \$60	1.937	0.9992	~	37.40	24.42
.4	270.	7.043	0.55564.	•	36.34	30.83
•	2-135	· 136	139666-0		39.70	31.76
176	2-165	2.186	0.995963	M	60.33	32.26
~		7.241	£4285A*9	~ \	41.05	32.82
Ñ	-295	2.305	0.957356	Jac.	41.85	33.47

2.1746-65 2.4746-65 2.4346-65 2.4346-65 3.4726-65 5.6346-05 6.9546-05 6.9546-05 1.1326-05 1.326-05 1.326-05 1.326-05 1.326-05 1.326-05 1.326-05 1.326-05

2.513e-u4 2.046e-u4 3.224e-u4

3-05/E-64 4-069E-94 4-536E-04

1.971t-C-5.512E-04

6-141E-04 6-554E-04 7-161E-64

TABLE 3. DATA TABULATION FOR TEST B-1-2 (CONCL)

SPECIMEN MU.: 0-1-2 BASELINE, STRESS = +4 TO +20 KSI

TEST FACOR 6.66 MZ. R= 6.200 W= 6.000 IN. 30.0 KIPS ENVIRONMENT CONDITION: POON ANBIENT Se 6.250 IN. FRAXE t.0 K1FS CCT SPECINEN PHINE

0A/DN 7-696E-04 8-4 11 F-04 9-266F-04 1-309E-03 1-694E-03 2-694E-03 3-896F-03 5-370F-03 5-370F-03
DELTA K 34.46 35.01 36.60 40.50 42.03 44.66 47.46
44.44.44.44.44.44.44.44.44.44.44.44.44.
MULT. CURN. CUEFF 0.4943052 0.996284 0.996598 0.996716 0.996716 0.979333 0.969225
A(K GRESSION) 2-548 2-548 2-528 2-609 2-760 2-814 2-647 3-129 3-267 3-778
AIMEASURFD1 2-466 2-520 2-510 2-610 2-945 3-120 3-225 3-345
CYCLES 10800- 10850- 10950- 11090- 11100- 111125- 111125-

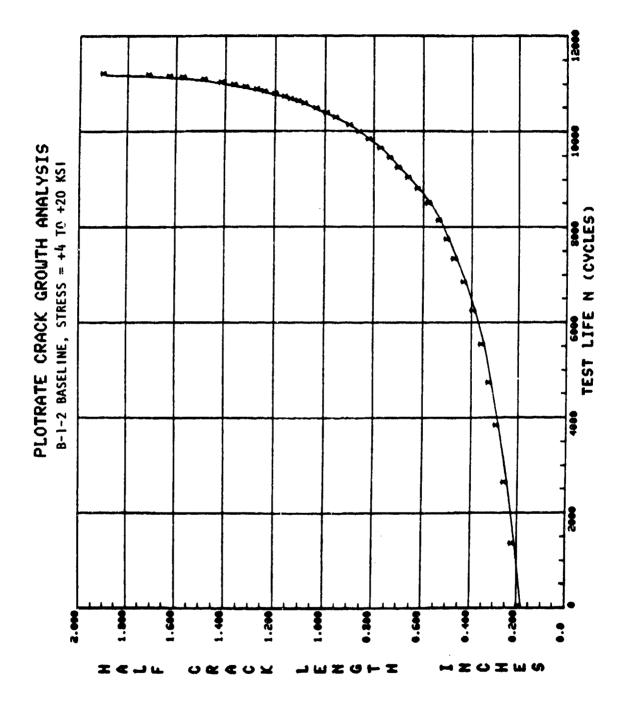


Figure 8. Crack growth curve for test B-1-2.

TABLE 4. INTA TABULATION FOR TEST B-2

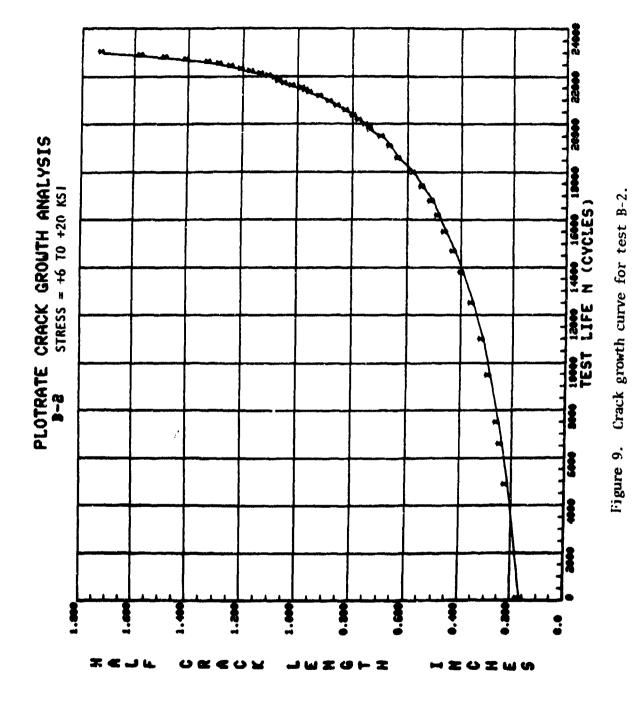
CC: STRICTEN BY VILOS BY

MOZVO	7.726E-06	1.3126-05	1.496-05	1-656E-05	1.9434-05	2.326E-05	2.790E-05	3-2656-65	3-5925-05	4-626E-05	4.5096-05	5-252E-05	5-966E-05	6-639E-05	7-752E-05	8.553F-05	9-351E-05	1-1096-04	1-0895-04	1-1435-04	1.1551-04	1.2048-04	1-3666-04	1.5705-04	1.7456-04	1-815c-04	2.026E-04	2-255E-04
DELTA K	2.6	11.38	12.03	12.38	13.23	13.95	14.70	15.59	16.23	16.82	17.39	2.21	18.50	19.20	19.96	20.70	21-32	21.81	22.01	22-22	22.57	23.00	23.45	23.92	24.50	25-13	25.60	25.96
K-NAX	14.20	16.26	17.19	17.69	18-90	19.93	21.11	22.23	23.19	24.63	24.84	25.51	26.43	27.43	28.54	75.57	30-46	31.15	31.44	31.74	32.26	32.85	33.50	34.17	35.30	35.96	36.57	37.08
MULT. CORR. COEFF	0.959898	0.959913	*06665*0	9316660	0-999192	40486.0	£05666.0	0.999629	0.999703	0.999243	0.998810	0.997031	503866.0	0.996167	0.997193	0.9%696	0.995325	0.997516	0.9953&B	0.997246	0.997185	0.598651	0.596700	191866-0	0.597586	0.996286	0.594339	0.992436
A (REGRESSION)	3.326	0.419	0.467	ウ・チグチ	ů.562	0.624	369°0	0.774	0.836	0.855	0.953	1.00€	1.079	1.146	1-232	1.313	1.324	1.440	1-463	1.487	1.526	1.576	1.636	1.666	1.7%	1.827	1.082	1.924
AINE ASURED)	0-356	0.426	0.465	0.495	0.565	C-£20	0.658	0.77	6.8.0	0.696	0.955	100.1	1.07	1.140	1.243	1.316	1.370	1.450	3-440	1.465	1.575	1.575	1.625	1.695	1.750	1.620	1.855	1-925
CYCLES	င္ပံ	479£.	.500.	7400-	***	10,00	12406.	13700.	14660.	15400.	16106.	1678.	17306-	17500.	18500.	300cc	15406.	19700.	15600.	14900	:C10C-	26300.	20506.	20705.	.050.	21100.	21256.	2135: •
NO.		~	m	•	'n	4	, 	נג	.	2	=	=======================================	13	*	2	2	11	9	5.7	2	. .	22	5 3	*	≈	3 2	23	2

TABLE 4. INTA TABULATION FOR TEST B-2 (CONCL.)

PECINEN NO.: 16-2 STRESS = +6 TO +20 KS! CT SPECINEN 16= 0.250 IN. W= 6.000 IN. AN= 0.0 IN. WINE 9.0 KIPS PNAX= 30.0 KIPS R= 0.30 TEST FREQ= 6.00HZ.	
--	--

0A/08 2-3436-04	2-2896-04	2.302E-04	2-350E-04	2.3ME-PA	2-6076-94	2.991E-04	3-4206-04	3-7146-05	4-286E-04	5-096E-04	6-1254-94	7.812E-04	9-7976-04	1-2076-03	1.595E-03
DELTA_K. 26.35	26.17	21.22	27.62	27.95	28.33	28.83	29.43	30.11	30.75	31.53	32.54	33.76	35.50	37.89	41.14
K-KAX 37.64	38.24	36.89	39.45	39.92	24.04	41-19	45.05	43.01	43,92	42.64	46.49	49.23	50.12	54.13	58.77
MULT. CORR. COEFF 0.991164	C.984652	0.990643	0.988527	0.969361	0.99653	0.998263	0.999251	0.999692	0.994211	0.596233	0.996456	0.997349	0.997&63	£15266-0	0.99825
AIRECRESSION) 1-970	2.018	2.070	2-116	2.154	1-197	2-234	2.321	2.3%	2-465	2.549	<.e55	2-779	2.969	3.166	3.434
AIMEASURTD)	2.020	2.010	2-120	2-150	2-18	2.255	2.375	2.395	2-473	2.555	2.635	2-135	2.455	3,135	3-435
CYCLES 21450.	21556.	21 6 5ù.	:17%.	21850.	21950.	22056.	22156.	2225u.	.235C.	22:50.	22550.	22652.	22756.	22856.	,295C.
2. 2.	2	31	×	33	34	35	*	21	36	36	2	7	42	43	3



DATA TABULATION FOR TEST B-3 TABLE 5.

A distribution

6.16 6.43 7.17 K-MAX 13.58 14.65 15.44 10.77 21.55 22.67 23.91 24.79 16.27 20.53 19.47 TEST FKEU# 6.00HZ. MULT. CORK. CUEFF 6.599592 0.996260 0.999662 0.992145 0.952096 0.998095 0.599315 10+955-0 0.957865 251196-0 0.997653 0.991061 AN= 0.0 K= 0.76 A(KTGRESSID4) 6-316 0-346 0-377 0-419 6-431 H= 6.000 1h. 0.476 0.531 0.596 0.866 0.661 STRESS +14 TO +20 KS 30. CKIPS ENVIRONMENT CONDITION: ROOM ANLIENT A (MEAS JRED) 0.380 0-415 0.445 0-310 0.530 0.560 0.346 0.725 0.875 0.485 0.595 b= (.250 1%. PMAX= 3000c. £6060. 70600. 87000. 105600. 13200u. 14300u. 153060. 158700. 55000. 11700. 200002 7 21 OKIPS SPECIMEN NO.: CCT SPECINEN HINT

0A/UN 1.345£-Us 1.215£-06

-352E-36 .320£-06 -350E-06 1.646e-66 1.606E-06 2-119E-06

-366€-66

2.598E-út 4.017t-66 5.0751-06

3.2 61E-C6

6.341E-06

0-996425

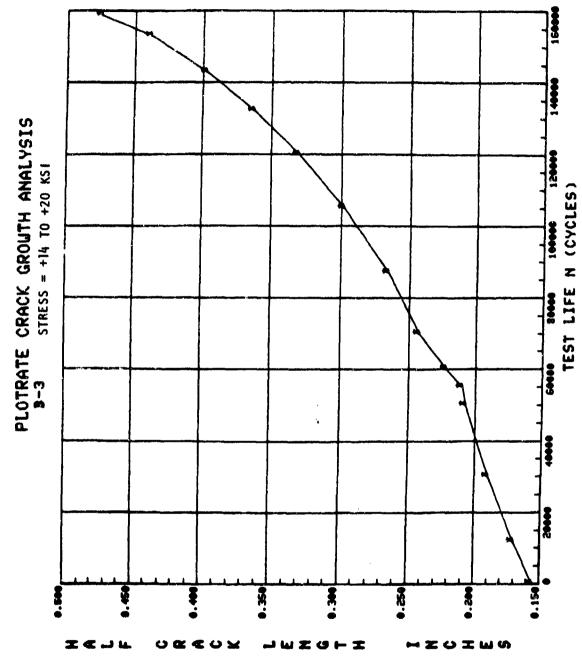


Figure 10. Crack growth curve for test B-3.

DATA TABULATION FOR TEST B-4 ٠ TABLE

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31.32 37.10 38.37 39.54 20-60 25.42 25.5% 26.66 29.06 34.65 43.50 24.20 30.34 40.85 42.15 24.69 24.90 25.72 26.68 27.63 24.54 25.51 14.30 14.30 16.90 17.25 18.61 20.51 21.3E 22.35 23.34 30.42 53.46 54.32 32.45 TEST FREQ= 6.00HZ. NULT. CORR. COEFF 0.997473 0.994199 0.996610 201655-0 696965-0 0.996539 195856-0 0.996232 0.997632 0.996455 0.998371 6.59EB36 616555-0 4.599166 £98675 10+266-0 0.998965 0.999477 AM= 0.0 R=-0.30 A (REGRESSION) W= 6.000 1N. 0.660 0.716 0.779 0.846 6.899 6.957 1.017 0.546 690-1 1.162 1.462 . 62E 1.381 -545 30. OKIPS STRESS -6 +20 KSI RCOM AMBIENT AIMEASURFO! 0.710 0.855 0.850 -045 .170 .225 -3£0 -460 .625 0.485 0.545 0.650 .545 0.353 0,400 1.015 0.620 B= 0.250 IN. PMAX= ENVIRONMENT CONDITION: 832-2000-3006-4006-5200-5700-6206-6900-7470-7730. 7970. 8176. 8540. 8790. 8850. 8370· CYCLES 1980. 1 -9.0KIPS SPECIMEN NO. 8 SPECINEN PAIR [25

5.747£-05 6.374£-05 7.567£-05 8.615£-05

2017 THE -126E-04 -263E-04

3.432E-05 4.191E-05

-926E-65

2-344E-05

.965E-05

1.473f - U4 1.661E - 04

•6 70€-iv+

2.1185-04 2.3755-04 2.712E-64 3.044E-04

43-3104-1 3-7516-64 マールとつ・ きっという 1.953E-ES

45.71 47.66

35.16 35.96 36.66 37.43

> \$61955°0 0.998374

169656-9

14-61 46.6% 68.66

Ú.599815

869. . 825 068-1

- 767

.825 .8% .945

-765

9080. 9240. 9310. 9376. 5.047E-04 E-314E-64

49.72 50.69

38.25

0.998 167

TABLE 6. DATA TABULATION FOR TEST B-4 (CONCL)

TEST FREQ= 6.00HZ, AN= 0.0 M= 6.000 IN. STRESS -6 TO +20 KSI 30.0KIPS ENVIRCHMENT CONDITION: ROOM ANTIENT 6* 5.250 IN. PMAX= SPECIMEN NC.: 6-4 -9.CKIPS CCT SPECIMEN

DA/D#	7-007E-04	7-4795-04	4-391E-04	14.5	9-712F-04	1 .067F-03	1-186-63	1-3765-03	1.5176-63	7706-03	2.0265-03	2-325F-03	2.4496-03	3-0105-03	1961	5.0056-62	7.4145-03	6.921E-03
DELTA K	51.74	52.61	53.71	54-47	55.82	56-83	57.8	59.20	9	62.14	63.82	65,36	67.19	69.77	71.37	73.54	76-46	\$0.54
K-MAX	39.80	40.47	41.31	42-21	42.94	43.71	44.53	45.54	46.71	47.40	60-64	50.27	51.69	53.67	24.90	56.57	58.82	96-19
MULT. CORR. CUEFF	6.997312	0.599762	0.999461	0.99598	5046460	0.996436	0.996434	0.996758	0.996843	0.998264	0.997525	0.958350	0.997922	0.994764	0.955675	0.999147	0.999970	6966660
AIREGRESSICM)	2-144	2.197	2.264	2-334	2.390	2.449	2.511	2.586	2.671	2.749	2.839	2.919	3,012	3.137	3.212	3.310	3-436	3.600
A (MEASURED)	2-140	27.7	2.260	2,335	2.3%	2.445	2.515	2.566	2.670	2.760	2.630	2.915	3.015	3-136	3.200	3.365	3.435	3.600
CYCLES	9530.	¥53~•	.0196	9650.	.7895	471ù.	974c.	477C.	. 7096	5£25.	9650.	st 7c.	584 0.	9910.	4420.	£630°	9940.	. 0686
NC.	6.7	30	31	32	33	34	35	36	37	38	36	6	17	42	43	\$	45	4 6

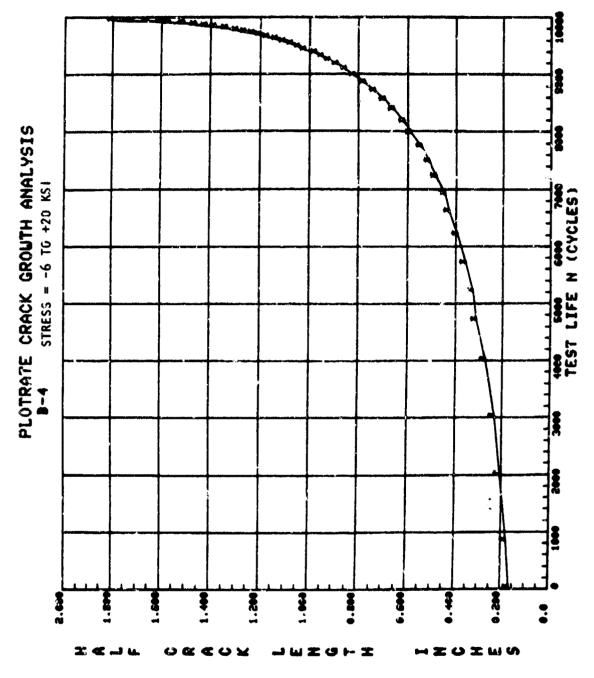


Figure 11. Crack growth curve for test B-4.

DATA TABULATION FOR TEST B-5 TABLE 7.

HASELINE STRESS = -2 TO 20 KSI

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SPECIMEN NO.:

7.7046-05 8.4906-05 9.7106-05 1.0566-04 5-448E-05 1.5896-94 1.5896-94 1.7616-94 1-796-04 1-9806-04 2-0206-04 3.246E-05 3.925E-05 6-026E-05 2.1796-04 2.2796-04 2.4546-04 2-4-32E-US 2-8446-04 20-30E6-1 .256-C 3-446-04 10.50 19.91 22.25 23.34 34.43 DELTA # 25.06 29-93 30-77 31-66 32.22 36.40 39.40 41.23 43.36 17.04 26.44 28-25 24.47 27.33 29.24 33.63 16.82 18.16 19.26 23.40 28.10 29.30 30.76 20°52 21°52 22.25 24.07 25.68 26.58 34.53 15.49 22.78 24.45 27.21 30.20 33.09 **71.97** TEST FREG 6,00HZ. MULT. CORR. CUEFF 0.997602 0.998558 . N. 0.999360 0.999040 0.997946 0.996426 0.999165 0-9975#8 0.997786 0.996429 0.996536 0.998865 0.998669 0.997732 0.997966 0.994502 0.996807 0.997423 6.998033 1488410 0.58654 991546-0 0.597622 AN= 0.0 R=-6-10 A (REGRESSION) W= 6.000 IN. 1.330 0.41 0.851 0.898 190. 1.129 1.158 1.252 1.292 .408 1.497 1.715 1-821 fr. 584 0.642 0.772 1.014 .452 1.598 0. BDE 0.705 30.0KIPS ENVIRONMENT CONDITION: ROOM AMBIENT A (MEASURED) 45 .510 .955 0.520 0.735 C.805 0.855 0-960 010 .085 136 .595 0.640 0.05 .260 .365 400 .715 0.333 0.365 B= 0.750 IN. FRAX= 11206. 7800. 8400. 8700. 19466. 10466. 10900. 10902. 1100c. 11400. 960c. 12104. 2700. \$400. 7100-930c. 10200 11500. 13606. 11950. 1200. -3.0XIPS SPFCIMEN PH J Re 133

.43

TABLE 7. INTA TABULATION FOR TEST B-5 (CONCL)

BASELINE STRESS = -2 TO 20 KSI

SPECIMEN NO.: 8-5

•

			DELTA.K. DA 45.15 5.03 47.40 1.20 51.43 1.40 50.12 2.46
	6.00MZ.		K-MAK 41.05 43.27 46.75 52.84 57.86
.e.	TE 51 FREQ= , 6.00HZ.		1) MULT. CORR. COEFF 0.591703 0.984603 0.991253 0.994741 0.996767
AN. 0.0	R=-0.10		1
WE 6.060 EM.	30.0KIPS RE-	_	AIREGRESSION 2.243 2.416 2.674 3.085 3.384
0.256 JN.	PMAX= 30.	RUDH AMESENT	A(MEASURED) 2-245 2-465 2-646 3-015 3-350
1	-3.0KIPS	WIRDAMENT CORDITIONS	LYCLES 12356. 12456. 12556. 12656.
CCT SPECIMEN	PAIR:	ENV I ROOME	2 00 m 20 m

1-2436-03 1-0466-03 2-6496-03 3-5476-03

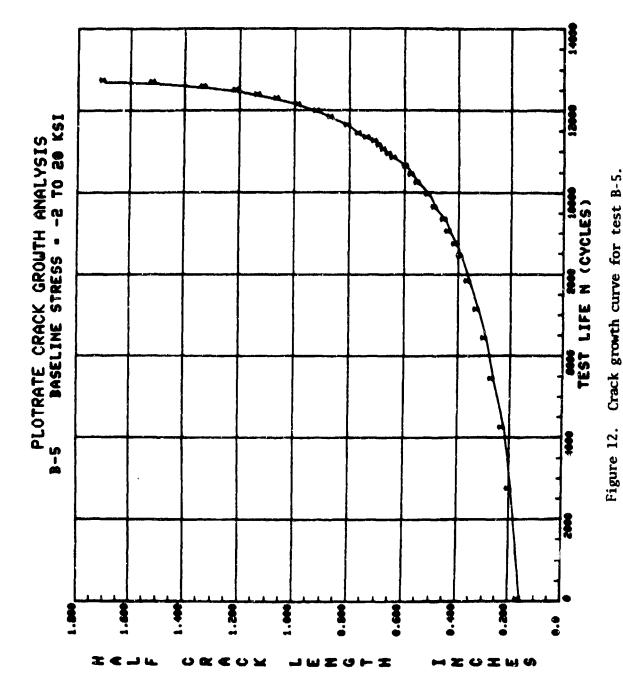


TABLE 8. DATA TABULATION FOR TEST B-6-1

SPECINEN NO.: 6-6-1 BASELINE, 20 KS1 STRESS

	1651 FKEQ= 3.00MZ	
Ä	FKEQ	
AN= 0.0 IN.	1651	
Ä	10	
M.	R= 0.01	
W= 6.000 IN.	S	
	36.0KI	BIENT
B= 0.250 1N.	PHAX= 36.0KIPS	ROOM ANDIENT
B= 0.2		
	PMINT 0.3KIPS	ENVIRONMENT CONDITION:
CCT SPECIMEN	ŏ	DMMENT
133	FRIRE	ENVIR

#Q/YQ	2.746t-05	2-025E-05	1.6176-35	1-6375-05	1-6675-05	1.9795-05	2-4266-45	2-827E-US	3-2296-05	3-5576-05	3.7051-05	3-4646-15	4.4±2E-65	5-315E-05	6-13-6-05	6-7136-05	7.674E-05	8-1#4E-05	6.8USE-65	9.9761-05	1-1226-04	1-444-04	1 -441E-04	1-6776-04	1.701E-64	1-8346-06	1-5736-64	7-039E-0-7
DE LIA K	13.73	14.31	14.50	15.22	15.55	15.86	16.33	16.93	17.66	10.45	19.19	19.85	20.5	21.44	22.45	22.99	23.59	25.26	24.93	25.67	76.51	47.39	20.35	X.2.	29.96	30.39	30-67	31.36
K-MAX	13.87	14.45	14.94	15.38	15.71	16.02	16.50	17.10	17.85	18.64	19.36	20.05	20.19	21.65	22.67	23.22	23.83	24.50	25.16	25.93	26.76	19.17	28.64	29.34	30.26	30.69	31.16	31.68
MULT. CORR. CUEFF	\$1 2 \$65°0	C. 181395	0.995726	0.596185	0.993533	40E646.0	0.909233	485186.0	0.991654	505164-0	0.547705	0.999243	0.997720	6.596432	0.998109	0.798054	0.996256	0.995154	0.997125	6.947334	0.997690	0.598277	0.995366	0.959330	0.994216	6-998154	0.599047	0.995078
A (REGRESSICH)	0.305	0.331	0.354	0.375	6-391	0.466	0.430	0.462	0.503	0.547	0.591	0.631	0.678	0.733	0.801	0.839	0.661	0.929	0.978	1.033	1.0%	1.164	1.240	1.334	1.368	1-403	1.42	1.462
AIMEASURED)	0.305	0.335	0.355	0.376	0.395	0.410	0.425	0.454	0.510	0.550	0.5%	0.630	0.686	0.730	0.1%	0.845	0.685	0.4.0	0.975	1.045	1.0%	1.166	1-245	1.330	1.305	1-405	1-445	1.430
CYCLES	ċ	-009	1200°	1900-	2400	3000	3600.	4200-	+800	5400.	6000	* 0094	7200.	7806.	e400•	\$ 70 0.	3006	9300	2 600.	9900	1020c	10500.	10800.	1110	11206.	11300.	11400	11500.
	-	~	~	•	w	٥	~	3	٠	2	11	27	13	*	2	92	17	11	<u>\$</u>	2	21	22	23	24	52	5 0	27	58

TABLE 8. DATA TABULATION FOR B-6-1 (CONCL)

SPECIMEN NO.: 8-6-1 EASFLINE, 20 KS! STRESS

			DAZDM	2 -0 ave -04	40-1767-7	2.050ZE-C4	2.5366-04	2.7146-04	2.4555-04	3-1254-04	3-3218-04	3-661 4-64	4 -JOSE-44	4.442E-U4	5.214E-64	6-137E-04	7.283E-04	9-1446-64	1.094k-63	1.3455-03	2.0045-03	2.9314-03	4.2 7.E-63	6-673E-03
			DELTA K	31.66	32.36	32.9%	33.52	34.13	34.62	35.57	36.33	37-14	33.03	39.05	40-18	41.57	43.21	÷5.26	46.53	48.EK	49.42	52.63	3.20	99-99
	00HZ. f		K-MAX	32-10	32.69	33.26	33.86	34.48	35.16	35.93	36.70	31.52	38.46	39.45	40.04	41.99	43.65	45.12	46.99	48.51	74.64	53-14	58.57	64.35
AN= G.0 IN.	TEST FREG= 3.00MZ.		MULT. CORN. COEFF	0.995222	0.9%681	0.996454	0.99952	0.999326	0.999563	0.999457	0.949520	043656.3	0.499232	0.999389	0.599060	D.599037	0.99448	0.999314	0.997334	0.996465	6.9 74589	0.985410	C-501047	0.895514
W= 6.000 IN.	30.0KIPS R= 0.01	P	A (REGRESSION)	1.523	1.565	1.611	1.660	1.711	1.768	1.830	1-893	1.960	2.036	2-116	2.206	2-316	2-444	2,599	2.692	2-798	2.895	3-105	3.423	3.936
R* 0.250 IN.	PMAX= 30.	ROOM AMBIENT	A (MEASURED)	1.520	1.570	719.1	1.655	1.715	1.70	1.025	1.6%	1-965	2.030	2-115	2.215	2-310	2.440	2.600	2.690	2.7%	2.925		3-330	3.540
	0.3KIPS	ENVIRONMENT CONDITION:		11600.	1780.	11600.	11960.	12000.	12100.	12200.	12300.	12400.	12500.	12600.	12700.	12800.	12900.	13000.	13050.	13100.	13150.	13200.	13250.	13300.
CCT SPECINEN	PRIN=	ENVIRONME	80	58	<u>۾</u>	~	35	33	*	35	36	37	8	39	2	14	75	.	‡	*	\$	14	48	3

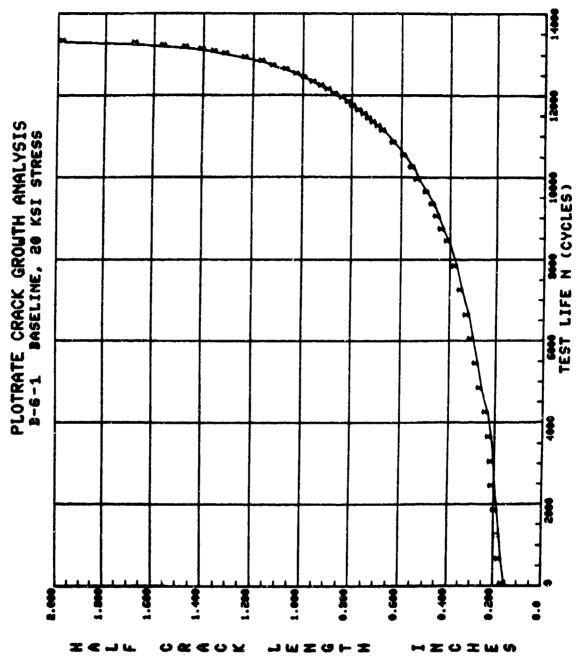


Figure 13. Crack growth curve for test B-6-1.

TABLE 9. DATA TABULATION FOR TEST B-6-2

PECIMEN NO. : B-6-2 BASELINE, 20 KSI STRESS

CCT SPECIA	CCT SPECIFIEM B= 0.250 IN. H= 6.000 IN. AN= 0.0 IN.	*250 IN.	3	000039 =	IN.	1	AN= 0.0		IN.		
PMIN* 0.3KIPS		PMAX= 30.0KIPS	30.0K		4	R= 0.01	16	ST	FREQ=	TEST FREQ= 6.00HZ.	•
ENVIRONMENT	ENVIRONMENT CONDITION: ROOM AMBIENT	ROOM A	HEIENT								
90	MO. CYCLES AIMEASURED) AIREGRESSION) MULT. CORR. COEFF K-HAX	ACHEASU	RED) A	IREGRESS	O NO	I	ULT. CO	8	COEFF	X	×
,1	ċ	0.31	'n	0.315		:	6.0	566	. 96	14.0	•

0.315 0.345 0.345 0.345 0.398022 0.457 0.998263 0.998263 0.998263 0.998263 0.998664 0.664 0.664 0.998664 0.998674 0.998674 1.061 1.133 0.998172 0.99876105 1.189 0.998165 1.249 1.313 1.314 1.314 1.329 0.998364 1.316 0.9984884 1.317 1.329 0.998364 1.329 0.998364 1.329 0.998364 1.329 0.998364 1.329 0.998364 1.329 0.998364 1.329 0.998364 1.329 0.998364 1.329 0.998364 1.329 1.329 0.998364 1.329 1.329 1.329 1.329 1.329 1.334 1.3369 1.349 1.359	YCLES	A (MEASURED)	AIREGRESSION	MULT. CORR. COEFF	K-MAX	DELTA K	NG/VQ
410 0.997148 14.76 14.61 11 410 0.997148 14.76 15.92 2 410 0.409 0.997002 15.01 15.92 2 510 0.457 0.997000 17.67 16.92 2 510 0.504 0.997000 17.67 16.92 2 510 0.605 0.996047 20.31 20.11 4 600 0.648 0.996047 20.31 20.11 4 600 0.656 0.996047 20.31 20.11 4 600 0.656 0.996047 20.31 20.41 4 610 0.966 0.996049 20.41 20.41 4 610 0.966 0.996049 20.41 20.41 20.41 610 0.996 0.996049 20.41 20.41 20.41 610 0.996 0.996044 20.21 20.41 20.41 610 0.996 0.996		0.35.0	0.315	9666660	14.09	13.95	1.322E-05
450 0.998022 16.08 15.92 450 0.998263 17.01 16.86 510 0.504 0.997000 17.87 17.69 510 0.505 0.997000 17.87 18.58 550 0.605 0.997000 17.87 18.58 660 0.605 0.99664 20.31 20.11 690 0.699 0.99666 21.32 20.11 690 0.99666 21.32 20.31 20.11 690 0.99666 21.32 20.91 20.91 610 0.99666 21.32 20.91 20.91 610 0.99666 21.32 22.49 20.91 610 0.99666 21.32 22.49 22.43 22.43 610 0.99666 21.32 22.43 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.63 22.23		06.5	0.345	0.997148	14.76	14.61	1.527E-05
510 0.996 263 17.01 16.64 510 0.504 0.997000 17.81 17.69 510 0.504 0.996 200 17.81 17.69 600 0.605 0.996 200 19.41 19.41 600 0.648 0.996 200 21.12 20.91 600 0.699 0.996 804 21.82 20.91 610 0.699 0.996 804 21.82 21.70 610 0.696 0.996 804 21.82 21.70 610 0.996 804 21.92 21.70 22.49 610 0.996 804 21.92 21.70 22.49 610 0.996 804 21.92 22.49 22.49 610 0.996 804 23.31 23.06 24.32 840 0.996 804 25.72 24.91 25.04 840 0.996 804 25.41 25.14 25.14 840 0.996 804 25.41 25.14 240 0.996 804			50* ·0	770R66*0	16.08	15.92	2-3085-05
950 0.997000 17.87 17.69 3 950 0.995774 18.77 18.58 3 950 0.995774 18.77 18.58 3 950 0.995774 18.77 18.58 3 950 0.99501 20.31 20.11 4 950 0.99501 20.31 20.11 4 10 0.964 0.99689 21.92 22.49 5 10 0.986 0.99689 23.31 23.06 7 10 0.986 0.99689 22.72 22.49 6 10 0.986 0.99689 23.31 23.06 7 10 0.996 0.99687 22.57 22.43 9 11 0.996 0.99687 22.54 22.43 1 12 0.996 0.99686 22.56 22.43 1 12 0.996 0.996 22.56 22.36 22.36 12 0		2000	0.457	0.996263	10.71	16.64	2-8135-05
550 0,555 0,995774 18.77 18.58 3 660 0,605 0,99606 19.61 19.41 4 660 0,609 0,99607 20.31 20.31 20.31 690 0,699 0,99686 21.42 20.91 5 610 0,604 0,99684 21.42 22.49 6 610 0,866 0,99687 23.31 23.49 6 610 0,996 0,9967 23.31 23.46 7 840 0,995 0,99867 25.41 25.49 7 940 0,995 0,9967 22.51 7 2 940 0,995 0,9967 25.41 25.06 7 940 0,9967 25.41 25.06 7 160 1,061 0,9967 26.51 26.05 1 160 1,133 0,9967 26.31 26.06 26.96 160 1,249 0,9968		036.0	20.00	0.997000	17.87	17.69	3-474E-05
600 0.605 0.996069 19.61 19.41 4 660 0.648 0.996507 20.31 20.11 4 660 0.699 0.99684 21.42 20.91 5 750 0.751 0.99684 21.42 22.49 <t< td=""><td>:</td><td>0.550</td><td>0,555</td><td>0.995774</td><td>18.77</td><td>18.58</td><td>3.855E-05</td></t<>	:	0.550	0,555	0.995774	18.77	18.58	3.855E-05
660 0.648 0.996507 20.31 20.11 4 690 0.699 0.996865 21.12 20.91 5 750 0.751 0.99689 21.92 21.70 20.91 5 810 0.866 0.99689 23.31 23.49 23.49 23.49 23.49 23.49 23.40 7 840 0.995 0.99687 24.57 24.32 9 6 6 6 6 6 6 7 <		9.0	0.605	690966-0	19.61	19.61	4-3046-05
690 0.699 0.996665 21.12 20.91 5 610 0.604 0.996584 21.92 21.70 610 0.604 0.996584 21.92 22.72 610 0.604 0.996691 22.72 22.99 610 0.603 0.996695 23.31 23.06 7 600 0.933 0.996172 23.90 23.66 7 600 0.933 0.996172 23.90 23.66 7 600 1.0041 0.996746 26.31 26.98 1 600 1.0041 0.996764 26.30 27.25 26.98 1 600 1.216 0.996764 26.30 27.25 26.90 1 600 1.226 0.996764 30.02 29.32 1 600 1.326 0.996342 30.52 30.22 29.32 1 600 1.326 0.996342 31.06 31.66 2 600 1.523 0.997828 32.18 31.66 2 600 1.523 0.997828 32.18 32.45 2		0.660	0.648	0.996507	20.31	20,11	4 704E-05
750 0.751 0.996584 21.92 22.72 22.49 610 0.996695 22.72 22.49 610 0.996695 22.72 22.49 610 0.996695 23.31 23.90 23.90 0.996695 23.31 23.90 23.90 0.996695 23.90 23.90 23.90 0.996696 24.57 24.32 990 0.996172 25.41 25.16 11.061 0.996174 25.41 25.16 11.061 0.996174 25.41 25.16 11.061 0.996174 25.31 25.90 11.189 0.996184 25.31 26.90 11.218 0.996185 29.62 29.32 11.218 0.996342 29.62 29.32 11.310 11.317 0.996342 30.52 30.77 24.30 11.329 0.992964 30.52 29.32 11.329 0.992964 30.52 29.32 11.329 0.992964 30.52 29.32 11.329 11.329 0.992964 30.52 31.30 22.22 25.31 11.523 0.997411 32.18 32.45 2		0.690	0.699	0.596865	21.12		A 002 C - 25
0.864 0.996691 22.72 22.49 0.845 0.998172 23.90 23.66 0.998172 23.90 23.66 0.998172 23.90 23.66 0.998172 23.90 23.66 0.998174 25.51 25.32 1.061 0.998174 25.41 25.36 1.189 0.998174 26.31 26.05 1.189 0.998174 26.31 26.05 1.249 0.991552 28.76 26.05 1.249 0.991552 28.76 26.05 1.249 0.992964 26.30 27.25 1.349 0.992964 30.02 29.32 1.349 0.992964 30.02 29.32 1.349 0.992964 30.02 29.32 1.349 0.992964 30.02 29.32 1.434 0.992946 30.02 29.32 1.434 0.992946 30.02 29.32 1.523 0.997818 32.18 31.66 2		0.750	0.751	783965-0	21 62		20135-02
0.996695 23.31 23.06 7 7 0.996695 23.31 23.06 7 7 0.996172 23.39 23.30 23.06 7 0.996172 23.39 23.30 23.06 7 0.996172 23.39 23.30 23.06 7 0.996174 25.41 25.16 1 1.133 0.996174 25.41 25.30 1 1.139 0.996174 25.41 25.30 1 1.189 0.996175 25.31 25.31 1 1.249 0.996175 25.37 25.39 1 1.249 0.996175 25.39 25.30 1 1.349 0.992944 30.02 29.62 29.32 1 1.349 0.992944 30.02 29.62 29.32 1 1.349 0.992944 30.02 29.32 1 1.434 0.992944 30.02 29.32 1 1.434 0.992949 30.52 31.30 2 1.523 31.30 32.45 2 1.523 32.45 2 1.523 32.37 32.45 2		0.610	0.864	0.004661	25 42	0/•17	3.439E-05
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0.995 0.998674 25.41 25.16 10.998674 25.41 25.16 11.001 0.998674 25.41 25.10 11.001 0.998674 25.41 25.10 11.133 0.996105 27.25 26.05 11.189 0.996105 27.25 26.00 27.21 11.249 0.991552 26.37 26.00 11.249 0.991552 26.37 26.00 11.317 0.991485 29.62 29.32 11.317 0.991485 29.62 29.32 11.319 0.992109 30.02 29.72 11.329 0.992109 30.02 29.72 11.329 0.992109 30.02 29.72 11.329 0.991481 32.18 31.00 2 20.77 2.10 11.523 0.991481 32.18 31.00 2 20.45 2.45 2.45 2.45 2.45 2.45			0.860	0.998172	23.90	23.66	7.9688-05
0.998674 25.41 25.36 1.061 0.998746 26.31 26.05 1.183 0.996105 27.25 26.98 1.189 0.994884 26.00 27.32 1.216 0.991552 28.37 28.08 1.249 0.991552 28.16 28.48 1.263 0.993696 29.32 1 1.317 0.984885 29.62 29.32 1 1.389 0.992849 30.62 29.32 1 1.389 0.992849 30.52 36.22 2 1.434 0.992842 31.06 30.77 2 1.434 0.995842 31.06 30.77 2 1.523 0.997411 32.18 31.66 2 1.523 0.997411 32.18 32.45 2		0.40	0.933	0.995229	24.57	24.32	9-1675-05
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1.263 0.953696 25.19 26.90 1 1.317 0.964885 29.62 29.32 1 1.349 0.992984 30.02 29.72 1 1.389 0.992549 30.52 30.22 2 1.434 0.995842 31.06 30.77 2 1.523 0.997411 32.18 31.66 2 1.523 0.997828 32.17 32.45 2		1.260	1.249	0.985752	28.76	28.48	1.5225-04
1.317 0.984885 29.62 29.32 1 1.349 0.992984 30.02 29.72 1 1.389 0.992549 30.52 36.22 2 1.434 0.995842 31.06 30.77 2 1.476 0.995842 31.62 31.30 2 1.523 0.997411 32.18 31.66 2		1.250	1.263	0.953696	55.19	24.40	1.7376-04
1.369 0.992984 30.02 29.72 1 1.369 0.992549 30.52 30.22 2 1.434 0.995842 31.06 50.77 2 1.476 0.995842 31.62 31.30 2 1.523 0.997411 32.18 31.66 2 1.571 0.997828 32.17 32.45 2		1.310	1.317	0.984885	29-62	20.32	1 7685-04
1.389 0.992549 30.52 27.12 1.434 0.992549 30.52 31.08 50.77 2 1.476 0.995842 51.62 31.30 2 1.523 0.997818 32.18 31.86 2 2 1.571 32.45 2		1.340	1.349	0.997964	20.05	000	10000
1.434 0.996342 31.06 50.77 2 1.434 0.995842 31.06 50.77 2 1.523 0.997431 32.18 31.66 2 1.571 0.997828 32.77 32.45 2		1.400	396	073600	70.00	71.67	1-5346-04
1.476 0.996342 31.06 50.77 2 1.476 0.995842 51.62 31.30 2 1.523 0.997411 32.18 31.66 2 1.571 0.997828 32.77 32.45 2		,	, () () () () () () () () () (F#C3FF0	30.52	36-22	K-000E-04
1.523 0.995842 51.62 31.30 2 1.523 0.997411 32.18 31.66 2 1.571 0.997828 52.77 32.45 2			10434	0.996342	31.06	50.17	2-1795-64
1.523 0.997411 32.18 31.66 2 1.571 0.997828 32.77 32.45 2		025-1	1.476	0.995842	51.62	31.30	2.3215-04
1.571 0.997828 32.45 2		1.520	1,523	0.997411	32.18	31.86	2.321F-04
		1.570	1.571	838799.0	32.77	32.45	2.536E-U4

TABLE 9. DATA TABULATION FOR THST B-6-2 (CONCL)

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	NO.YO		3.26BE-04	3.536E-04	4-050E-04	4-393E-04	4.946E-04	5.2546-04	6.051E-04	6.607E-04	7.2016-04	8 -030E-24	8-9565-04	1.004E-03	1-0455-63	1.17/6-03	1.339E-03	1.565E-03	1-665E-03	2.2736-03	2-7296-03	3.311E-63
	DELTA K	33.08	34.37	35.20	36.12	37.15	38.07	39.06	40.08	40.92	41.66	42.61	43.09	43.88	44-68	45.54	46.73	47.60	48.54	50.71	53.06	56.01
IN. FREG= 6.00HZ.	F K-MAX		34.72	35.56	36.48	37.53	38.45	39.46	65.05	41.33	42.08	43.04	43.52	44.32	45.13	46.00	47.20	48.08	49.64	51.23	53.60	56.58
AN= 0.0 IM. 0.01 TEST FREG=	MULT. CORR. COEFF	0.997649	0.995129	0.993986	0.94862	0.994856	0.993374	0.992165	0.993056	6.993673	0.993808	0.992963	0.996196	6.998633	0.997835	0.997198	6676650	756766-0	114866.0	££0666-9	65686670	0.998783
WF 6.000 IN. 30.0KIPS RF 0.	NT A (REGRESSION)	1.623	1.730	1.799	1.875	1.960	2.035	2.116	2.198	2.265	2.324	401 (2.435	2.495	2.556	2.620	2-706	2.769	2.863	2.962	3.133	3.311
E= 0.250 IN. PMAX= 30	ROOM AMBIENT	1.630	1.740	1.790	1.870	1.980	2-020	2.120	2.190	~	2.310	2.400	2.440	2.4%	S	·O	2.710	~	2.870	2.970	3-140	3.310
SPECIMEN EF C	MENT CONDITION: CYCLES	11000	11200.	11300.	11400	11500.	11580.	11660.	11740.	11790.	11836.	11A64.	11910.	11940.	11970.	12000.	12035.	12060.	12090.	12120.	12150.	12180.
ds 132	ENVIRONMENT	2 2) H	35	33	¥	35	ጸ	11	38	39	Ç	1+	42	43	\$	45	44	+1	7	Ş	20

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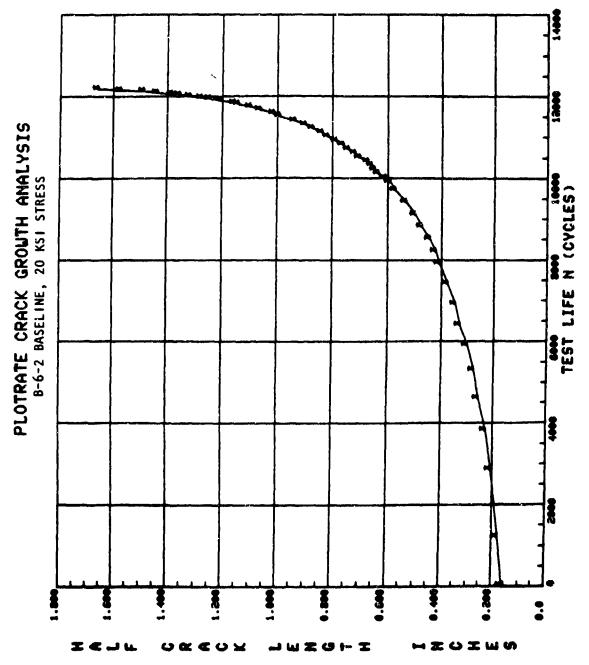


Figure 14. Crack growth curve for test B-6-2.

TABLE 10. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP I - CONSTANT-AMPLITUDE LOAD

	Applied			Over- load/	/Under			
Test	Loading	Mex	$\sigma_{ ext{Min}}$	Max	σ_{Min}	NI	NII	
No.	Profile	Ksi	Ksi	Ksi	Ksi	Cycle	Cycle	Comments
M-1	° NI	8	0					de/dn at low ΔK range, R = 0
M-2	NI	8	2.4					da/dn at low ΔK range, R = 0.3
M-3	⁰ NAAAA	8	-8					da/dn at R = -1
M-4	° NI	3	-2.4					da/dn of negative stress ratio at low ΔK range
M-5	\mathbb{Z}^{N}	40	0					da/dn at high ΔK range, R = 0
м-6	[√√√√√	40	12					da/dn at high ΔK range, R = 0.3
M-7	⁰ V GREET	40	28					da/dn at high ΔK range, R = 0.7
М-8	N	40	-4					da/dn of negative stress ratio at high ΔK range
м-9		8	-0.8					da/dn of negative stress ratio at low ΔK range, R = -0.1
M-10		20	-6					da/dn of negative stress ratio at high ΔK range, R = -0.3

TABLE 11. DATA TABULATION FOR TEST M-1

SPFC [MEN NO.: M-] CENTER CHACKED PANEL, STRESS = 8KSI, R = 1)

			UA/DN	1.4565-07	6.260E-07	8.147E-07	9.3396-07	1.1456-06	1.33%-06	1.511E-06	1.817E-06	2.155E-06	2.6206-06	3.0126-06	3.389E-Ge	3.775F-06	4.065E-06	4. 498E-06	5.0775-06	5. 194E-06	5. F34F-06	7. 432F - C6	7.854E-06	8.16BF-05	8.582E-06	8.95AE-06	9. 7025 - 06	1.03%-05	1.1466-05	1.2655-05	1.3695-05
			PELTA K	5,31	5.89	6.25	6.46	6.15	10.7	7.31	7.71	8,19	8.68	9.00	9.28	7.56	4.88	10.20	10.49	10.83	11.20	11.62	12.03	12.27	12,52	12.77	13.03	13,32	13.64	13.99	14.37
	• ZH 000		X 5 m - Y	5.31	5.85	6.25	6.46	6.15	7.012	7.31	7.71	6.19	8.68	9.00	9.28	9.56	9.88	19.20	10.49	10.83	11.20	11.62	12.03	12.21	12.52	12.77	13.03	13.32	13.64	13.99	14.37
AN= 0.0 IN.	TEST FREG* 6.000HZ		MULT. CORE. CORFF	U.995511	0.995652	0.995188	0.995980	0.995300	0.996613	0.999392	95966000	0.999294	01.9980.0	J. 99AB27	1949496	0.999588	11.999463	0.098001	0.998767	0.998638	0.498988	0.999077	0.999252	0.999144	0.999334	0.999497	0.999402	0.990750	1,990741	0.999582	0.994518
h= (.000 } K.	CIPS R= 0.0		ACPEGRESSICN	.1.280	0.344	0.386	0.412	J. 45.3	0.445	0.526	0.584	0.06.7	0.736	J. 788	0.837	.0.846	.1.94.2	1.040	1.055	1.118	1.190	1.273	1,343	1.400	1.452	1.502	1.556	1.615	1.640	1.751	1.830
8= 0.250 IM. h:	PMAX= 12.00KIPS	ROOM APRIENT	LREDI		•		•	•	0.485	2	0.565	S	7	0.785	0.835	0.85¢	0.940	1.00.1	•	1.116	1.155	1.270	1.355	1.400	1.455	0	1.555	1.615	1.680	۷,	1.825
	0.0 K to S	ENVIRONMENT CONDITION:	CYCLES	ċ	75000.	105090.	12000.	140009.	155000.	170001.	187000.	2060m.	2230MJ.	2330/60,	24100).	2480M).	255000	26200).	26 POIN.	274000.	280000	286000	291900	294000	297000.	300000	303000.	305000.	309000.	312000.	31 5000.
STE SPECIMEN	*N 1%d	ENV TROUME	40°	_	~	~	>	u"	٠ ۵ ا	٠.	œ	c	=	=	15	13	14	ا ۶	9 !	17	Œ. :	61	ָר יִ	21	25	() ()	\$ °	۲,	5 4	7.2	٥,

TABLE 11. DATA TABULATION FOR TABLE M-1 (CONCL)

TEST FREG= 6.00 HZ. AN = 0.0 IN. CENTER CRACKED PANEL, STRESS # 8KSI, R # 0 R= 0.0 M= 6.000 IN. 12.0 KIPS ENVIRONMENT CANDITION: ROOM AVRIENT R= 0.250 IN. P HA X= 0.0 KIPS SPECIMEN NO.: 4-1 CCT SPECIMEN

Ç,	CYCLES	A (MEA SLFED)	A(PEGRESSICN)	MILT, COOP, CREFF	K-MAX	DEL TA K	DA/DN
50	318006.	1.915	1.915	11.999486	14.79	14.79	1.503E-05
30	3219:10.	2.015	2.011	0.498789	15.26	15.26	1.589E-05
11	324000.	2.104	2.113	0.999308	15.76	15.76	1.6736-05
32	32 7000.	2.22>	2.211	0.497773	16.26	16.26	1.6016-05
33	130000.	2,315	2.317	0.498149	16.80	16.80	1.970E-05
34	333000.	2.425	2.4.5	0.198353	17.41	17.41	2.24 TE-05
35	336014).	2.580	2.573	0,199749	18.14	18.14	2,5656-05
36	339000.	2.725	2.777	0.999653	19.45	19.05	3.0336-05
37	342000.	2.935	2,920	0.496976	20.12	20.12	3.7298-05
38	345000.	3.145	3.164	0.994739	21.51	21.51	4.1785-05
49	348000	3.415	654°E	111.960.6	23.62	23.62	6.2196-05
£	3510m.	3.820	3.9/1	0.467948	21.03	27.03	8.4935-05
1 ,	352406.	4.125	4.172	11, 7950 +4	19.67	24.67	1.050F-04

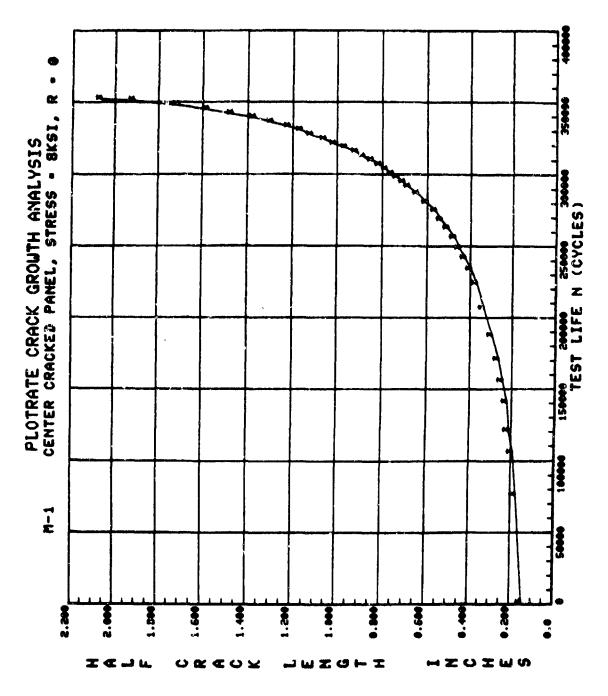


Figure 15. Crack growth curve for test M-1.

TABLE 12. DATA TABULATION FOR TEST M-2

STRESS = 2.4 TO 8.0 KS!
CRACK PANFL
CPAC.
CENTER
4-2
1 NO. 1
SPEC INFN

* CCT SPECIMEN		A= 0.250 IN.	M# (000 EN.	<u>.</u>	AA= O.O IN.	• •		
PHINE 3.	3.6 KIPS	P MA X=	12.0 KIPS	R= 0.30		TEST FFF0= 6.00 47.	•	
ENVIPENMENT CONDITION:	COND 1 T 104	MUUM	AMPIENT					
Ç-NM4K¢I	45000- 94000- 94000- 145000- 237000-	A(MFASU) FD) 0.365 0.340 0.375 0.420 0.460	FOI MERCRESSICNI 0.305 0.326 0.374 0.423 0.479 0.535	្រុស្ខ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១ ១	MIN * CHEU CCEFF 0.99484 0.99485 0.998877 0.99877 0.998766 0.998766	CUEP. CCEFF K-144X 0.999484 5.55 0.9994836 5.32 0.998877 6.59 0.999243 6.97 0.998766 7.37	55 3.88 3.88 4.07 1.4 4.30 59 4.88 97 6.88 37 5.16	1,551E-07 3,669E-07 4,42F-07 5,292E-07 6,269E-07 7,050E-07

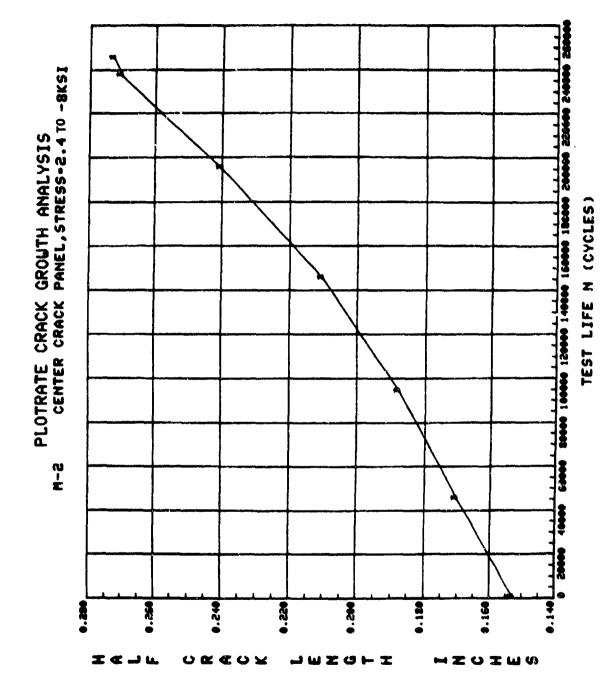


Figure 16. Crack growth curve for test M-2.

DATA TABULATION FOR TEST M-3 TABLE 13.

Nahl Jado						
	Œ	0.250 IN.	M= 6.000 EN.	At 0.0 fm.		
.21- =k]wq	2.11 6105	PMA K= 12.	.1) K uS R=-1.40	TEST FREGE	6.00 HZ.	
ENV I RONNERST	COMPLITIONS	AMBIENT AIR				
٠,	SACHES	A (MEA SLRED)	A (RFGFE SSI FN)	MULT. CORR. COEFF	X-XAX	DELTA K
-	÷	0.385	0.345	0.39884	6.2	~
^	1300)	0.415	0.4!3	10.447592	94.9	12.92
3	18100.	954.0	0.427	0.987542	6.58	13,15
4	28100.	0.470	0.488	0.974382	7.03	14.06
ır.	33107.	0.520	15.27	1). 36AU56	7.31	14.63
æ	39107.	0.565	0.566	0.974.199	7.58	15.16
1	511837.	0.635	0.636	0.981746	8.05	16.09
Œ	60R37.	0.660	0.673	1.965216	H.27	16.53
c	65837.	0.680	0.646	0.481950	8.37	15.74
5	70837.	9.7C?	0.711	0.398940	8.57	17.05
_	75437.	0.750	40.751	1.998992	4.11	17.54
~	80837.	0.863	0.841	0.999235	70.6	18.14
Č	45173.	o. 85°	0.851	0°1666°°	9.36	18.73
•	89990	0.857	106.0	941n6h*U	9.65	19.29
ç	92000	0.940	0.942	0.199132	9.88	19,75
æ	95500.	1.000	9060	1).798662	10.17	20.35
7	.00066	1.050	1.053	10.098493	10.49	20.97
Œ	102500	1.120	1.114	0.998436	10.81	21.61
6	104000.	1.175	1.180	0.998925	11.15	22.30
c	109500	1.254	1.258	0.998976	11.55	23.10
_	112001.	1.320	1.318	0.999384	11.85	23.71
2	114500.	1.390	1.349	0.4997#1	12.20	24.41
<u>e</u>	116800.	1.450	1.449	0,498348	12.51	25.02
*	1198011	1.545	1.5.17	0.957744	12.94	25.89
ır.	N	1.63	1.645	0.9987+2	13.47	26.94
56	125855.	1.770	1.772	0.998717	14.09	28.17
_	•	1.91°	1.8.1	0.998439	14.70	29.40
Œ	*****					

1.616E-06 2.251E-06 2.87E-06 2.87E-06 2.87E-06 2.278E-06 4.476E-06 4.476E-06 6.139E-06 6.139E-06 1.958E-06 1.958E-05 1.179E-05 1.978E-05 2.329E-05 2.329E-05

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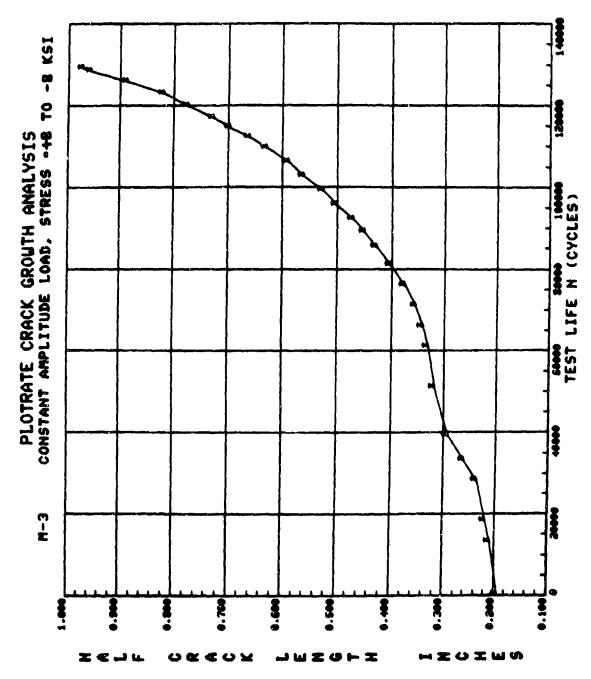


Figure 17. Crack growth curve for test M-3.

TABLE 14. DATA TABULATION FOR TEST M-4

AN ... 0.0 TN. CENTER CRACK PANEL, STRESS -2.4 TO +8 KS! WE 6.000 IN. R= 0.250 IN. SPECIMEN NO.: 4-4 NAMI JAS 133

TEST FREU= 6.00 HZ.

R*-0.30

12.0 KTPS

P MA X=

-3.6 KIPS

=N] Fd

ENVIONMENT CONDITION: POON AMBIENT

P0/ V0	8. 49()E - 07	1.0976-06	1.69 FF-06	2,15%-06	2.5416-06	7.97:5-06	3.54 × -06	4-1645-06	4. 732F - 06	5. 300F - 06	5. 94.RF = (14)	6-9406-04	7- 7465 - 06	8.237F-06	8.54 ¥ - 0.6	9.0476-05	20 X20 0	1 0015-06	COLLINO	1.1205-05	1.1618-05
DEL TA K	7.21	7.58	8.21	6.8	9.23	9.71	19.27	10.89	11.37	11.84	12.25	17.69	13.09	13.55	13.93	14.29	14.45	15.01	10.00	15.42	15.88
X-34X	5.54	5.83	6.32	6.17	7.10	7.41	7.9.3	8.38	B. 74	9.10	6.42	9.16	10.01	10.43	10.72	10.99	11.27	¥ V		5 × · · · 1	12.22
PULT. CUBB. COFFF	0.999560	9.998614	0.997569	0.998181	0.998794	0.949285	0.998691	U.999133	0.499936	151666.0	0.999294	0,998017	952650	(1,097133	0.497711	0.997191	CA1.700.00	0.49992	100000	1076	9150bn*b
A (REGRESSI CN)	0.305	11.337	0.355	0.452	1.401	0.5-9	0.613	0.687	0.747	0.807	0.861	0.922	0.977	1.044	660.1	1.150	1.203	1.258	000	0.76 • 1	1.30g
A (PEA SLPFD)	0.365	0.337	0.4CC	0.445	0.455	0.55	0.610	0.685	0.745	0.810	0.860	0.920	6.975	1.040	1.165	1,155	1.198	1,255	1 225	740	1.350
CALLES	•	1750-1.	. 0000	55000.	65000	75000.	85000.	95000	10200	10800.	11 3000.	11 90:00.	122000.	126000.	129000.	1320th).	135000	138000	141000		. 4400.
٠٠٠		r:	•	\$	ď	જ	_	œ	o	P		12	13	7-	51	9	11	1.8	0	. (ę

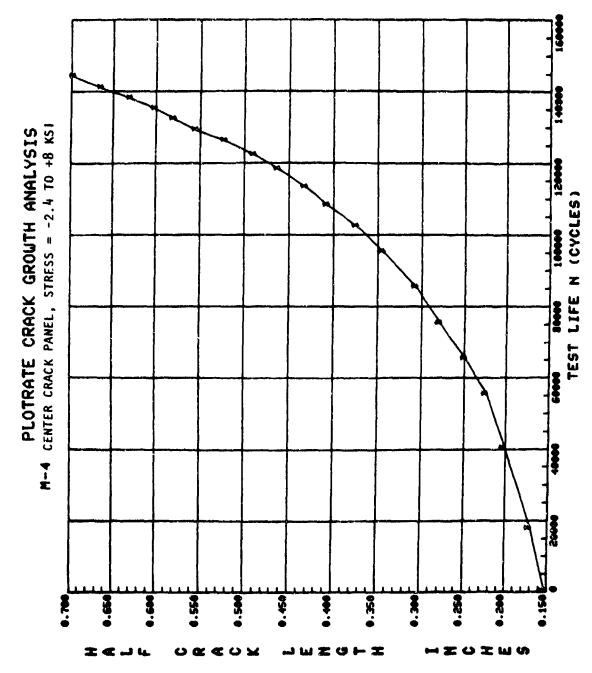


Figure 18. Crack growth curve for test M-4.

DATA TABULATION FOR TEST 4-5 TABLE 15.

151
2=401
. STRESS=40K
PANEL
CRACKED
CENTER
4-5
<u></u>
NUNI CE
j

			CELTA K	27.52	27.81	32.83	35.40	38.97	40,17	43.36	44.63	45.99	41.38	48.97	54.78	52.70	55.05
	· 7H 00·		K-MAX	27.RO	28.09	33.16	35.76	39.37	41.18	63.80	45.08	67.93	47.86	95.65	51.29	53.23	55.61
AA = ().() IN.	TEST FREG* 6.00 HZ.		MULT, CAPE, CREFF	0.984567	0.99165 0	0.992547	0.987906	0.9909.) 2	777966"0	0.598657	0.998390	0.998081	0.998818	0.998362	0.998207	0.7699.0	1.955621
h= 6.000 fh. AM	KIPS A= U.01		A CREGRESSICN) MUL		0.313	6.455	0.505	0.609	0.665	0.749	13.752	0.839	0.888	3.945	1.012	1.044	1.175
8= 0.250 IN. h	PMAX= 60.0 KIPS	ROOM AMBIENT	A (PEASLEED) A	0.303	0.335	0.433	0.505	0.565	0.655	n, 755	0.750	0.630	0.855	0.945	1.010	1.080	1.175
	0.6 KIPS	: NC1110NCO	CYCLES	•	4.T.	4.16.	506	909	656.	706	726.	746.	766.	786.	R 06.	826.	846.
CCT SPFCIMEN	0 = 71 tsd	GNC LINDWHURL COND	۲,	_	~	•		٠,	· «c	~	u	• 6	61	-	12	13	14

0A / DN 8. 1405 - 05 6. 2096 - 05 3. 1786 - 04 4. 58 26 - 04 7. 8706 - 04 1. 0376 - 03 1. 1346 - 03 1. 2515 - 03 1. 5606 - 03 1. 7525 - 03 2. 0896 - 03 2. 0896 - 03

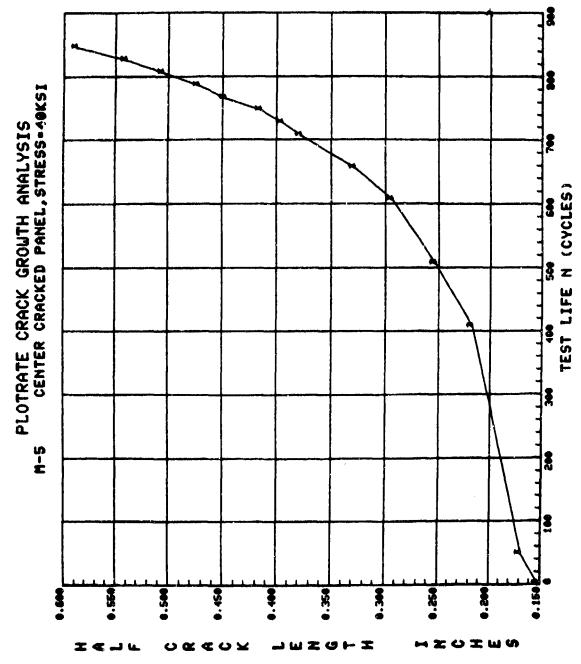


Figure 19. Crack growth curve for test M-5.

TABLE 16. DATA TABULATION FOR TEST M-6

SPECIMEN VO.: M-6 CENTER CRACKED PANEL. STRESS 12 TO 40 KSI

			DA/DN	1.5456-05	7.3436-05	1-221F-04		1. (3 % - 04	2.487F-04	3.520E-04	4.5445-04	755E-04	50 3000	2.1 CM-C	5.661E-04	6.261E-04	70-3575 1	1. 30 30	8.90% - 04	
			DELTA K	14.58	20.90	22.62	70.77	54.14	25,46	- 27.2A	28.89	40.00	C	31.10	32,13	34.22	34 50	34.04	36.07))
	6.00нг		X-44X	16.72	29.86	22 23	76.76	34.49	36.37	38.97	41.27		47.74	74.47	45.91	95-15		44.34	51.52	1
ANE 0.0 IN.	TEST FREO* 6.00HZ.'.		MILT. CORR. COEFF	11.498037	43600 6	000000	0196660	0.984147	0.981790	0.990304		00:166-0	006566	0.997314	0.995630	F 45000 0		0.999647	A 5000 C	
W= 6.000 IN.	60.0 KIPS R= 0.34		# #WUIDS BOOK		010.0		0.413	0.470	1, 522	127		1.0cm	0.716	0.170	0.820	0.000	* 10 * 7	0.940	, cco -	
4= 0.750 IN.	PMA X= 60.0	RUOM AMRIENT	100000	A L MEA SUPERIOR	0.010	0.355	0.410	0.470	3 2 3 4		0.26.0	11,665	0. 730	0.770	0 C a C	0.00	20.0	0.96.0		1.00.1
	18.0 × 10 S	ENVIOLENT COMBITTION:		CALLES	•	461)。	793.	100		• • • • • • • • • • • • • • • • • • • •	1295.	1393.	1443.	1403		1243	1543.	1643	• • • • • • • • • • • • • • • • • • • •	1693.
KAMIJIAS 133	l =NImd	NEWNLAIANE	•	<u>.</u>	_	~	•	• •	• •	•	•	_	Œ	: c	•	=			71	13

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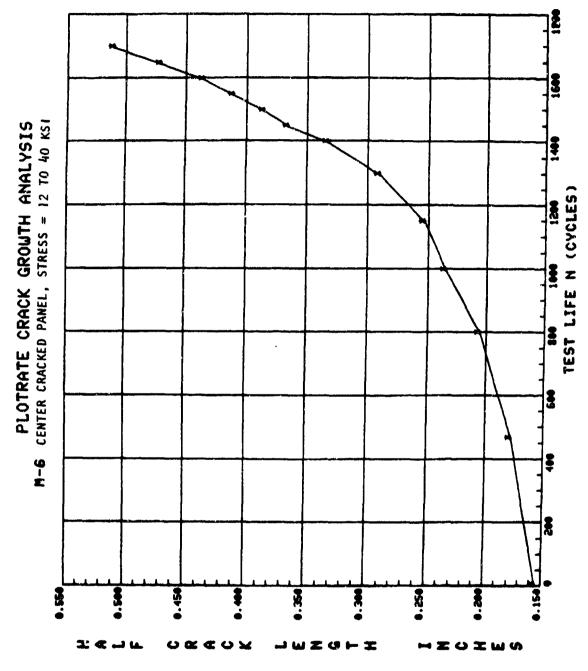


Figure 20. Crack growth curve for test M-6.

TABLE 17. DATA TABULATION FOR TEST M-7

SPECIMEN NO.: M-7 CENTER CRACKED PANEL, STRESS 28 TO 40 KSI

TEST FRE0= 6.00 HZ. AN= 0.0 R= 0.70 W= 6.000 IN. 60.0 KIPS ENVIRONMENT CONDITION: ROOM ANBIENT B= 0.250 IN. P MA X= 42.0 KIPS CCT SPECIMEN

DA/DN	1.049F-07	1.413F-05	1.0105-05	2.412E-05	3.063E-05	2. A916-05	7.001E-05	CD-31CC-4	4.562E~U3	3 1000 00	7.1.08E-05	8-414-62	9.104E-05	9.960E-05	1.0395-04	1.187F-04	1.3505-1	1 6726-04	7076-64	10 JC 10 C	50-2K00-7	*0-3//**7	30 1 1/E - 04	4.384F-04	6-6925-04	9-1656-04	1 - 409E - 03	1 6267	1.037C	2.516E-03	3.940E-03
DELTA K	8.39	9.44	17.01	10.64	11.08	11.72	12.11	11001	12.21	13.63	13.70	87.01 	16.31	14.65	14.99	15,34	15.73	71. Y.	14.46	20.	17 67		50.01	18.61	19.25	19.65	19.93	20.00	2000	20.83	71.70
K-MAX	27.96	31.46	33.69	35.48	36.94	39.07	75.09	7.00	62.67	44.21	17.64	7.6	11.14	48.83	49.95	51.14	52.43	53.93	55.52	57.02	יים אינו אינו	70.04	*****	70.70	64.16	65.51	44.99	67.62	2	24.69	72.32
MULT. CORR. COEFF	0.999985	0.999716	0.999387	0.993622	0.991939	0.496221	0.996758	0.997052	2707770	0.995719	007000	0.000000	790360	0.998531	0.997419	0.498677	0.998958	0.999070	0.999185	0.999407	0.994267	0.980612	710/0/10	0.766233	0.988043	0.995054	0.971657	0.981775	100000	18608-1	0.991119
A (REGRESSICN)	0.310	0.392	0.449	0.497	0.538	0.600	0.640	0.697	0-740	0.796	0 E	0.882	200.0	226.0	0.963	1.006	1.054	1.110	1.171	1.229	1.290	1.357	6.77	0::	616.1	1.570	1.648	1.656	1.730	2	1.849
A (MEA SLRED)	0.310	0.350	0.450	0.455	0.530	0.550	0.645	0.655	0.735	0.750	0.835	0.665	200	0.923	0.965	1.000	1.055	1.115	1.165	1.230	1.295	1.350	1.410		020.	1.55	1.605	1.655	1.700) () () () () () () () () () (0.00
CYCLES	0	5629.	1379.	8490.	9380.	10380.	10880.	11380.	11880.	12380.	12680.	12930	12121		13330	13530.	13730.	13930.	14110.	14270.	14420.	14550.	1 4661)	17.750	******	• 06.4	14810.	1 4830.	14850.	14870	•
, .	- (~ `	~	*	·	£	_	ec	σ	Ju	=======================================	12	~	7 -	+ :	<u>.</u>	۲.	17	18	19	20	2.1	2.2		7 6	* 0	25	24	27	α ζ	·

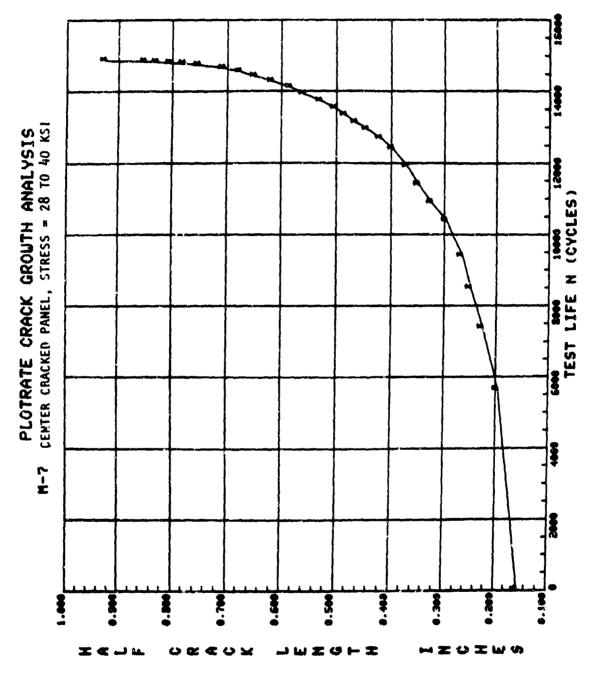


Figure 21. Crack growth curve for test M-7.

TABLE 18. DATA TABULATION FOR TEST M-8

TEST FREQ= 6.000HZ. ž AA 0.0 CENTER CRACKED PANFL STRESS -4 TO 40 KSI R=-0.180 M= 6.000 IN. 60.00KIPS ENVIRONT FONDITION: ROOM AMBIENT R= 0.250 IN. P MA X= -6.00K IPS SPECIMEN 40 . H-8 SP FC IMEN =7.1 Hd

DA /DN	3.552E-05	5.2385-04	6.75-6-04	8.6335-04	1.1665-03	1.4766-03	1.9225-03	2.331E-03	2,8245-03	3.592F-03	4.54 TE-03	5.2596-03	5.9836-03	7.222E-03	9. ú31F-03	1.348F-02	2,1835-02	3.647F-02	4. 75.RF - C2	6.770-02
DELTA K	30.75	35.50	37.41	39.83	42.28	45.66	48.86	51.50	53.78	55.59	56.59	57.91	59.49	61.36	62.55	64.07	70.97	70.25	72.22	75.16
K-4AX	27.96	32.28	34,01	36.21	38.43	41.51	44.42	46.82	68.84	50.54	51.44	52,65	54.09	55.73	56.87	58.25	60 . Q 4	63.86	65.65	68.33
MUST. CORR. COEFF	0.999934	0.999815	0.998541	0.995239	0.995998	0.998361	0.998967	0.998622	0.498343	0.995601	0.996060	6.997902	0.997829	016966-1	0.480635	0.969738	0.975776	0.985814	0.993064	916566-0
A (REGRESSI CN)	0.310	0.412	0.457	0.517	0.581	0.675	0.770	0.851	0.924	0.984	1.017	1.052	1.116	1.181	1.274	1.278	1.349	1.5/13	1.576	1.645
A (MEA SLAED)	0.310	0.410	0.460	0.515	0.575	0.670	0.765	0.850	0.915	0.960	1.015	1.055	1.115	1.150	1.225	1.265	1.335	1.465	1.565	1.665
CYCLES	ີ	200.	240.	280.	320.	360.	390.	410.	425.	435.	+40.	448.	450.	455.	458.	+61.	. 494	467.	468.	.694
.		~	~	4	Š	£	~	œ	6	<u>.</u>	=	12	13	14	1.5	16	1.7	13	19	20

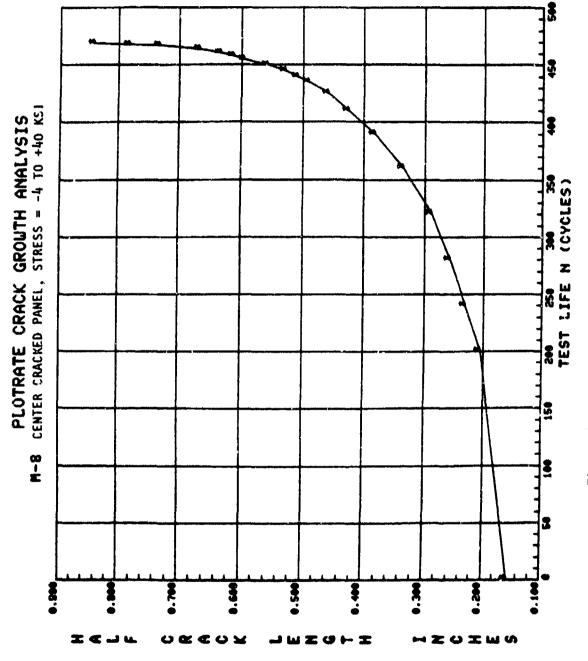


Figure 22. Crack growth curve for test M-8.

TABLE 19. DATA TABULATION FOR TEST M-9

TEST FREG= 6.00 HZ. Ah= 0.0 IN. CENTER CRACKED PANEL, STRESS -. 8 TO +8 KS! R=-0.10 M= 6.000 IN. 12.0 KIPS ENVIRONMENT CONDITION: ROOM AMBIENT 8= 0.250 IN. =X YH 6 -1.2 KIPS SPECIMEN NO.: 4-9 CCT SPECIMEN =NINd

DA /DN 1.249F-07	8.052E07	1.2835-06	1.7505-06	2.176F-06	2. 596F - 06	3.0925-06	3, 720F - 05	4.2436-06	4. 761F - 06	5. 266F - OK	5. 7835-06	6. 201F - 06	6. 6.765 - 06	7. 49AF - 06	0 7046-06	2 002F OF	1.0435-05	1.1786-05	1.2036-05	8.410E-06
DELTA K 6.12	6.39	6. 78	7.32	7.79	8.22	8.62		9.50	9.85	10.17	10.52	10.89	11.20	11,51	12.23	77.77	12.09	13.06	13.49	11.67
K-MAX 5.57	5.81	6.17	69.9	7.08	7.47	7.83	8.25	8.63	96.8	9.25	9.56	06.6	10,18	10.46	11.12			11.87	12.26	15.61
MULT. CORR. COEFF 0.998623	0.999348	0.999588	6 9 9 9 9 9 9 9	0.999292	097666	0.998408	0.999192	0.999446	0.999323	0.999037	6668660	0.999341	0.999454	0.994642	0.995914	767965-0		0.445348	0.994419	0.999973
ACREGRESSICN) 0.367	0.335	0.376	0.437	0.495	0.549	0.603	0.667	0.729	0.782	0.832	0.886	0.946	0.997	1.049	1.175	1.255	100	176-1	1.400	1.470
A (MEA SLRED) 0.308	0.332	0.38 0	0.435	0.455	0.550	009.0	0.665	0.125	0.785	0.835	0.860	0.945	1.000	1.055	1.170	1.240	1 126	66601	014-3	1.470
CYCLES	30000	20000	10000	8 5000	97000.	107000.	11 7000.	125000	131000.	136000.	141000.	146000.	150000.	154000.	162000.	166000.	169000	12000	112000	175000.
9	~ •	- 0	*	ĸ	•	~	€0 1	σ ;	0 ;	;	12	~	1	S .	91	17	Q 2	? .		02

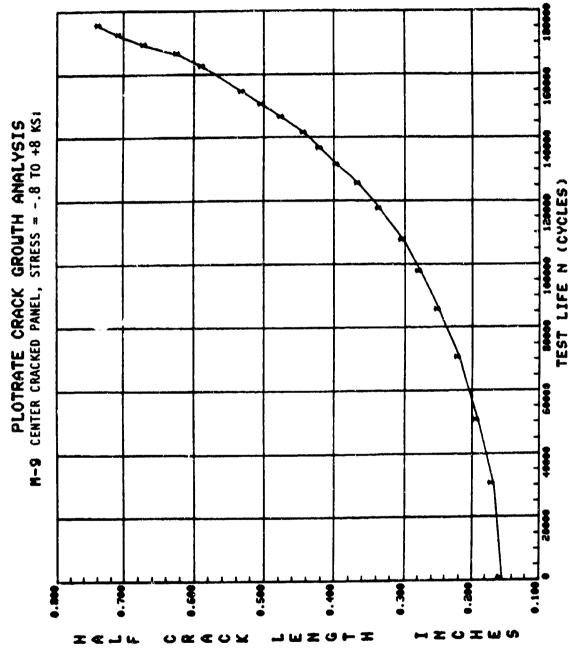


Figure 23. Crack growth curve for test M-9.

TABLE 20. DATA TABULATION FOR TEST M-10

SPECIMEN VO.: 4-10 CENTER CRACK PANEL. STRESS=12 10 +40 KSI

CC1	CCT SPECINFN		8= 0.250 IN.		h= 6.000 IN.	ž	A. C		į
7174	-18,	O KIPS	P MA X	90°(PMIN= -18.0 KIPS PMAX= 60.0 KIPS	R=-0.30	ĭ		
ENV 11	OKKENT	ENVIRONMENT CONDITION: A	ON: ROOM AMBIENT	A MB I ENT				S	1531 FREO= 6.00 HZ.

NO/ NO	9.603E-04	8.457F-04	7.9875-05	8. 930F - C4	1.06 16 - 03	1.4555-03	2.012F-03	2.610F-03	3. 794F - 03	4. 20.K = 03	50-X-97-03	50-7-603	6.950F-33	8. 52.2F - 03	1-1346-02	1.5:35-02	70 7575	20-3.16-2	3.32 TE-02	4.84nE-02	7.472E-02	
DEL TA K	36.90	40.33	45.24	44.57	40.68	49.27	52.85	56.43	29.40	61,98	64.40	64 70	A	5 P P P P P P P P P P P P P P P P P P P	71.21	73.51	75.18		13.64	82.62	90.05	
	31 -12	30.72	36 36	36.03	100 75	200	00.07	15.64	42.64	47.69	v9°64	51.38	57.88	66.44		20.54	57.83	80.09	73 67	00.00	07.54	
MULT. CARR, CAEFF	U.997593	0.992860	0.987368	0.988557	10.997573	0.998784	E07865 13	0.508340	0+20//+0	11156.00	11.366.11	11:464:11	0.996626	0.990846	21.99.03	0.0000 C	616001	0.981197	0.990317	0.943434		
A(REGRESSICN) 0.320	0.381	0.423	0.464	0.509	0.566	0.649	0.736	0.813	0.881	0.950	1.015		1/0-1	1.143	1.211	1.261	1.255		064-7	1.723		
AIMEASIREDI 0.320	0.575	646		0000	CDC *0		0000	018.0	0.875	0.940	1.005	1.060	1 20	1000	1.502	1.260	1.350	1.445	906	621.1		
C VCLES 0.	94.	92.	120.	148.	176.	196.	2.0e	2.00	• 10 •	• 977	237.	236.	240.	764.	246	27.3		249.	251.			
	æ	*	ŀυ	•	~	40	0	10	-	• •	7:	5 -	<u>*</u>	15	16	~		9	19			

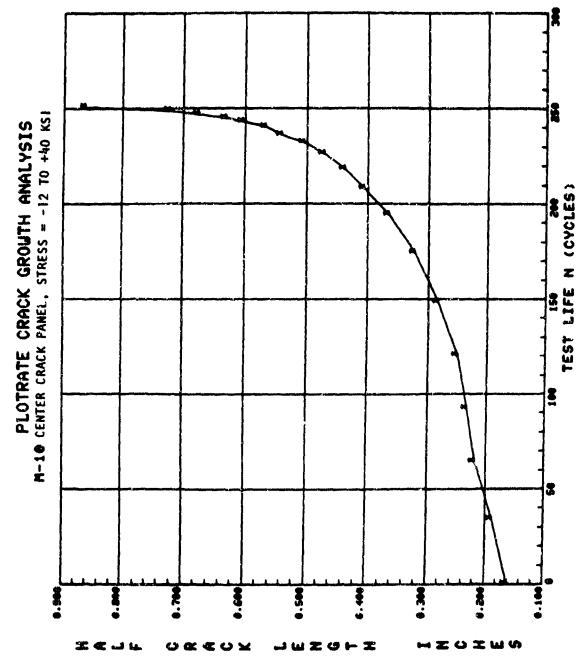


Figure 24. Crack growth curve for test M-10.

TABLE 21. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP II - SINGLE OR PERIODICAL OVERLOAD/COMP LOAD

	Applied	Base L	oad		load/		N	
Test No.		Max Ksi	Min Ksi	Max Ksi		N _I Cycle	N _{II} Cycle	Comments
M-11		20	0	30	0	2,500	To failure	Single over-load
M-12	ı ^N ı A ^N ıı A	20	0	30	0	2,500	2,500	Periodically applied single load effect, R _I = 0, R _{OL} = 1.5
M-13	° (12224)	20	0	45	0	2,500	2,500	Periodically applied single load effect, R _I = 0, R _{OL} = 2.25
M-14	I NI V NIIV	20	6	40	6	2,500	2,500	Periodically applied single load effect, R _I = 0.3, R _{OL} = 2
M-15	0 1/289 1/289 /	30	21	40	21	2,500	2,500	Periodically applied single load effect, R _I = 0.7, R _{OL} = 1.33
M-16		20	0	20	-6.0	2,500	2,500	Periodically applied comp load effect R I = 0
M-17	N _I N _{II}	20	6	20	-6.0	2,500	2,500	Periodically applied comp load effect R = 0.3
M-18	° kn∧m∧	40	28	40	-12	2,500	2,500	Periodically applied comp load effect R _I = 0.7
M-19		20	0	30	-6.0	2,500	To fåilure	Single overload/ comp load effect R _I = 0, R _{OL} = 1.5

TABLE 21. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP II - SINGLE OR PERIODICAL OVERLOAD/COMP LOAD (CONT)

Test	Applied			Unde	load/	NI	NII	Comments
No.	Loading Profile	Max Ksi	Min Ksi	Max Ksi	Min Ksi	Cycle	Cycle	Continents
M-20		20	0	30	-6.0	2,500	2,500	Periodically applied overload-comp load effect
M-21		20	0	40	-12	2,500	2,500	Periodically applied overload-comp load effect
M-22		20	0	30	-6.0	2,500	To failure	Single comp load- overload effect
M-23		20	0	30	-6.0	2,500	2,500	Periodically applied comp load-overload effect
M-24	N _I N _{II} A	20	-6	30	-6	2,500	2,500	Periodically applied overload effect, R<0
M-25	0 1/07/) ////// /	20	-6	40	-6	2,500	2,500	Periodically applied overload effect, R<0, higher stress
M-26		8	-2.4	8	-16	2,500	To failure	Single comp-overload effect R<0
M-27		8	-2.4	8	-16	2,500	2,500	Periodically applied comp-overload effect
M- 28	o ∖ MAN AN	20	-6	30	-15	2,500	2,500	Periodically applied tension-comp over-load effect

TABLE 21. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP II - SINGLE OR PERIODICAL OVERLOAD/COMP LOAD (CONCL)

	Applied	Base L	oad		·load/	N ₊	N	
Test No.	Loading Profile	σ _{Max} Ksi	σ _{Min} Ksi	σ _{Max} Ksi	σ _{Min} Ksi	Cycle	Cycle	Comments
M- 29		20	-6	40	-15	2,500	2,500	Periodically applied tension-comp overload effect, higher stress
M-30		20	-6	40	-15	2,500	2,500	Period_ ally applied comp-tension overload effect

TABLE 22. DATA TABILATION FOR TEST M-11

SPECIMEN NO.: 4-11 BASE STRESS O TO 20 KSI, SINGLE OVERLOAD O TO 30 KSI

A (REGRESSION)
0.295
0.335
0.389
0.457
1).556
0.619
0.696
0.740
0.789
0.837
0.688
1 7 6 0
1001
1.060
1.106
1.156
1.204
1.263
1.327
1.396
1.470
1.548
1.623
1./10
1.765
1.878
1.897
1.974

DATA TABULATION FOR TEST M-11 (CONCL) TABLE 22.

BASE STRESS 0 TO 20 KSI, SINGLE OVERLOAD 0 TO 30 KSI ---Speciality 40.1

7471						
	F.E.	0.250 IN.	W= 6.000 IA.	AN= 0.0 IN.		
=71 kg		P MA X a		TEST FREG= 6,	6.00 HZ.	
CAL TURNING TO THE	COMPITIONS	4: ROOM APSIENT	<u> </u>			
<u>.</u>	CYCLES	A (PEA SLRED)	A (REGRESSION)	MILT, CORP. CORES	3 1	3
	14250.	2.045	2.054	0.497580	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	DELIA A
2	14350.	2.145	2.137	0.595985	14.05	20.02
	14400.	2.190	2,183	0.997636	40.30	40.40
~	14450.	2,225	2.226	0.994590	40.84	40.84
F	14500.	2.260	2.263	0.997327	41.30	41.30
4 !	14550.	2.365	2.309	0.999201	41.89	41.89
<u>.</u>	14600.	2,365	2.364	0.998110	42.60	42.60
اع	1465.).	2.425	2.423	0.999281	43.37	43.37
_	14700.	2.485	2.483	0.999748	44.16	44.16
8	14750.	2.540	2.541	0.999599	44.93	44.03
6	14800.	2.600	2.549	0.998633	45.72	45.72
6 0	1 48 50.	2.665	2.663	0.998940	46.60	46.60
	1,4900.	2.735	2.738	0.999241	47.65	47.65
47	14950.	2.830	2.827	0.998848	48.91	48.01
m	15000.	2.940	2,936	0.998586	50.54	50.56
4	15050.	3.075	3.083	0.999208	52,79	52,79
νć.	15100.	3.260	3,265	0.999793	55.79	55, 79
٥	15150.	3.500	3.500	400000°	10 07	

4.135E-04 4.218E-04 4.362E-04 4.964E-04 5.411E-04 5.750E-04 6.089E-04 6.571E-04 7.429E-04 1.429E-04

1.692E-03 2.112E-03 2.655E-03

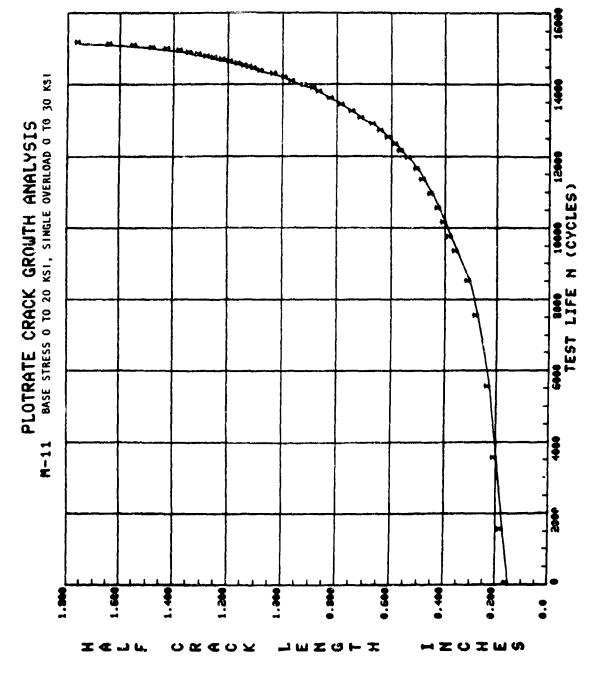


Figure 25. Crack growth curve for test M-11.

TABLE 23. DATA TAIGLATION FOR TEST M-12

BASE STRESS 0 TO 20 KSI, PERIODIC OVERLOAD 0 TO 30 KSI 21-H SPECTMEN NG.

			DA /DN	9. 732E - 06	526E-	2.083E-05	2,3246-05	2.876E-05	3.212E-05	4005	3.5596-05	3.7685-05	4.018E-05	4.375E-05	5.0716-05	6.016E-05	6.962E-05	7.830E-05	8.329E-05	808E-	9.665E-05	1.1306-04	1.4265-04	1.83%-04	2.188E-04	2.821E-04	3.0136-04	2.980E-04	2-9116-04	2.6706-04	2-366F-04
			CELTA K	13.70	14.66	16.47	17.21	19.15	20.02	20.53	21.11	21.64	22.22	22.84	23.44	24.18	25.07	26.09	27.00	27.70	28.33	29.02	29.89	31.03	31.97	33.14	33.83	34.62	35.47	36.20	36.79
6.00 HZ.			K-MAX	13.70	14.66	16.47	17.21	19.15	20.02	20.53	21.11	21,64	22.22	22.84	23.44	24.18	25.07	26.09	27.00	27.70	28.33	20.62	29.89	31.03	31.97	33.14	33.83	34.62	35.47	36.20	36.79
TEST FRE0= 6.			MULT. CORR. COEFF	0.998715	0.998889	0.998953	0.998861	0.998740	0.998281	410666.0	0.999543	0.999136	0.999450	2646660	0.996476	0.997414	0.997843	0.997047	0.998000	199866-0	868966-0	0.997616	0.997895	0.999184	6166660	0.996569	0.995654	0.988892	0.989597	0.992110	0.987773
		b	A (REGRESSICN)	0.298	0.341	0.429	6.468	6.577	0.630	0.661	U.678	0.732	0.771	0.812	0.854	906-0	0.970	i • 044	1.113	•	•	1.269	1.338	1.430	1.506	1.602	•	1.723	1.792	1.852	1,900
P MA X=		POOM AFBIENT	A (MEA SLRED)				0.475							0.810				•	•		•	•	•	-	•	70	٠	•	•	1.855	•
	CONDITIONS	CONDITION:	CYCLES	ċ	1598.	410B.	5000.	7120.	3000	8500.	9000	9500.	10000	10500.	11:000	11500.	12000.	12500.	12900.	13200.	13500.	13800.		14400.	4500	14800.	14900	15000.	15100.	15200.	15300.
PM IV#	TNESCO	INSUNDED AND	· CN		7	~	. *	ď	ن	_	œ	σ	<u>e</u>	=	21	13	4 ₹ (5.	91	17	3	61			2.5				92	27	28

TABLE 23. DATA TABULATION FOR TEST M-12 (CONCL)

BASE STRESS 0 TO 20 KSI, PERIODIC OVERLOAD 0 TO 30 KSI 4-15 Specifyey 40.:

			DA /DN	2. 080E - 04	2.1436-04	2.27Æ-04	2.45%-04	2.7236-04	3.205E-04	3.93EE-04	4.946E-04	6.455E-04	9.558E-04	1.3466-03	1.9096-03	2.861E-03
			DELTA K	37.21	37.70	38.23	38.80	39.43	40.09	40.97	41.90	43.22	44.76	47.58	51.91	59.59
	.ú0 HZ.		X-MAX	37.21	37.70	38.23	38.80	39.43	60.04	40.87	41.90	43.22	44~76	47.58	51.91	59.59
AA= 0.0 IN.	TEST FREG= 6.00		MULT. CORR. COEFF	0.999142	0.999538	0.999775	0.399913	0.999588	0.996875	0.997125	9906660	0.998652	0.985241	0.590840	0.994833	0.998138
W= 6.00.3 IN.		-	A (REGRESSION)	1.935	1.975	2.017	2.064	2.114	2.167	2.229	2.310	2.412	2.528	2.733	3.027	3.478
A= 13.250 IN.	H X VW G	ROOM APRIENT	A (MEA SLEED)	1.935	1.975	2.015	2.065	2.115	2.170	2.230	2,305	2.415	2.555	2.120	2,965	3.480
		CONDITIONS	CYCLES	15400.	15500.	15600.	15700.	15900.	15900	16000	16100.	16200.	16300.	16400.	16500.	16600.
CCT SPECISEN	* >1 7d	:NULTIONCO ENGRADATIONS	٠,٥٠	56	30	16	32	33	34	35	36	37	3.8	39	40	7

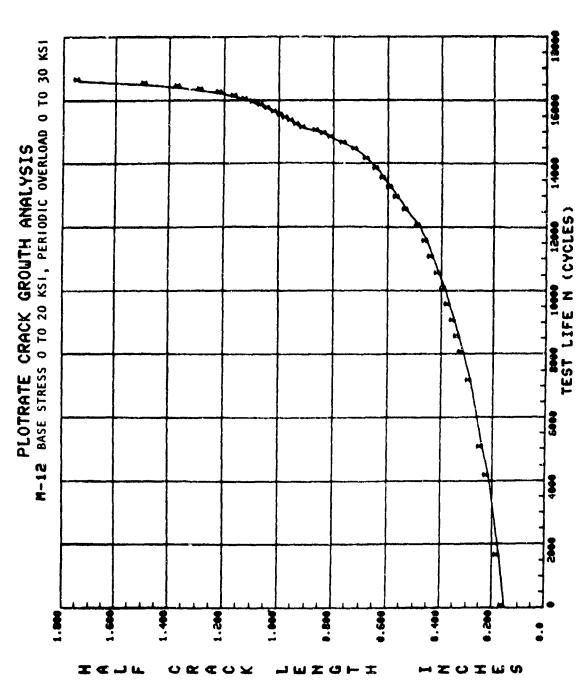


Figure 26. Crack growth curve for test M-12.

TABLE 24. DATA TABULATION FOR TEST M-13

4-13 BASE STRESS 0 TO 20 KSI, PERIODIC OVERLOAD 0 TO 45 KSI SPECIMEN NO.:

ENVIRONMENT CONDITION: RODH AMBIENT NO. CYCLES A(MEASUPED) A(MEGRESSICM) MULT, CORR, CORFF K-44X DELTA K 10. 0.326 0.4455 0.4455 0.04458 114.95 114.95 114.95 11.47F-05 2 2000. 0.350 0.4452 0.04980.3 14.95 114.95 11.47F-05 3 4600. 0.450 0.4452 0.0445 0.9960.3 14.95 114.95 11.47F-05 4 6000. 0.450 0.4452 0.0445 0.9960.3 14.95 114.95 11.47F-05 5 10000. 0.4452 0.4452 0.9960.3 14.95 114.95 11.47F-05 6 10000. 0.4452 0.4452 0.9960.3 14.95 114.95 11.47F-05 8 10000. 0.4452 0.4452 0.9960.3 14.99 11.49 11.49 11.49F-05 9 10000. 0.550 0.4452 0.9960.3 14.99 11.49 11.49 11.49 11.49 1 12000. 0.550 0.551 0.5412 0.9962.3 11.49 11.49 11.49 1 12000. 0.550 0.4452 0.9962.3 11.49 11.49 11.49 1 12000. 0.550 0.4452 0.9962.3 11.49 11.49 11.49 1 12000. 0.550 0.4452 0.9962.3 11.49 11.49 11.49 1 1 20000. 0.550 0.4452 0.9962.3 11.49 11.49 1 1 20000. 0.655 0.4642 0.9962.3 11.49 11.49 1 2 2000. 0.655 0.4643 0.9962.3 2.046 2.046 2.046 1 2 2000. 0.455 0.4643 0.9962.3 2.046 2.046 2.046 1 3 2000. 0.755 0.4643 0.9973.3 2.145 2.141 2.141 2.141 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	CCT SPFCIMEN	*	0.250 IN.	W= 6.000 IR.	AN - 0.0 IN.			
CONDITION: RODH AMBIENT CYCLES AMBESCREDION FULT. CORP. CORPT FULT. CORP. CORPT CORPT<	= 7.1 % d		P MA Ke		T FRF0= 6	71		
C. VCLES A(MEASLBED) A(FGRESSICN) PULT. CORR. CORF. CORF. LAAA DELTA K DAAA 1 0.255 0.435 0.999788 13.63 13.63 1.477 2 2000. 0.455 0.445 0.498043 15.99 15.99 1.1475 4 6000. 0.456 0.447 0.498043 15.73 15.73 1.1475 5 6000. 0.450 0.447 0.498043 15.73 15.73 1.1475 6 0.000. 0.500 0.417 0.4940720 18.78 16.73 1.1475 7 12000. 0.550 0.477 0.4940720 18.78 18.78 8.4376 8 16000. 0.550 0.477 0.4940720 18.78 18.70 1.1476 9 16000. 0.550 0.452 0.4940720 18.78 18.73 1.1476 1 10.000. 0.560 0.452 0.4940720 18.78 18.78 1.23	ENV I PONMENT		ROOM	-				
1 0. 0.255 0.295 0.999188 13.63 13.63 1.477 2 4000. 0.435 0.4354 0.99813 15.99 15.99 1.1475 </th <th>٠٥٠</th> <th>CYCLES</th> <th>SLP</th> <th>A (RFGRE S SI CN)</th> <th>. CORR.</th> <th>AM</th> <th>LTA</th> <th>DA/DN</th>	٠٥٠	CYCLES	SLP	A (RFGRE S SI CN)	. CORR.	AM	LTA	DA/DN
2 2000. 0.354 0.998843 14.95 15.99 1.495 1.3825 3 4000. 0.465 0.354 0.999003 16.73 16.73 16.79 1.1495 1.1496 1.1496 1.1496 1.1496 1.1496 1.1496 1.1496 1.1496 1.1496 1.149	,4	•	2	0.295	~	13.63	3.6	4 77E - 0
4000. 0.405 0.405 0.405 0.405 0.405 0.405 0.405 0.405 0.405 0.442 0.099809 15.99 15.99 15.99 1.147E 6 8000. 0.475 0.442 0.0981809 16.73 16.73 16.73 16.73 16.13 16.73 16.13 <td< td=""><td>7</td><td>2000.</td><td>35</td><td>0.354</td><td>0.998843</td><td>14.95</td><td>14.95</td><td>3825</td></td<>	7	2000.	35	0.354	0.998843	14.95	14.95	3825
4 6000. 0.452 0.991809 16.73 16.73 1.0136 5 8000. 0.477 0.990418 17.38 17.38 9.306 6 10000. 0.551 0.544 0.734501 18.00 18.00 7 12000. 0.565 0.544 0.73451 19.19 18.38 9.3367 8 14000. 0.565 0.645 0.6412 0.73451 19.19 17.728 6.077 9 16000. 0.655 0.6412 0.949537 19.19 17.728 6.077 1 20000. 0.655 0.648 0.940529 20.06 20.326 6.077 2 20000. 0.654 0.648 0.94053 20.05 20.02 20.02 20.03 20.02 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20.03 20	~	4000	Ç	0.405	0.999003	15.99	15.49	47E
5 8000. 0.475 0.489418 17.38 17.38 9.3306 6 10000. 0.560 0.541 0.994120 18.00 17.38 9.3306 7 12000. 0.551 0.544 0.94314 19.19 18.00 9.3376 8 16000. 0.565 0.6412 0.94534 19.19 19.19 7.7286 9 16000. 0.665 0.652 0.994529 20.06	4	•000°	5	0.442	608166.0	16.73	16.73	1.0135-05
6 10000 0.511 0.949720 18.40 18.00 9.4377 7 12000 0.551 0.544 0.738619 18.58 18.58 18.00 8 16000 0.551 0.544 0.73214 19.19 19.73 18.00 9 16000 0.665 0.612 0.99529 20.06 20.05 20.06 20.05 20.06 20.05 20.06	S.	8009.	47	0.477	0.989418	17.38	17.38	330E-
7 12000. 0.556 0.544 0.738619 18.58 18.58 8.0367 8 14000. 0.587 0.632 0.945374 19.19 19.19 17.72 9 16000. 0.635 0.632 0.990529 20.06 20.06 5.4026 1 20000. 0.655 0.659 0.973712 20.32 20.03 5.4026 2 20000. 0.659 0.973712 20.32 20.32 5.4076 3 24000. 0.669 0.975601 21.01	•	100001	50	•	0.990720	18.00	18.00	437E
8 14000 0.58f 0.453214 19.19 19.19 7.7237 9 16000 0.665 0.612 0.995374 19.73 19.19 7.7237 9 16000 0.655 0.653 0.995374 19.73 19.73 6.076 1 16000 0.655 0.669 0.973712 20.32 20.32 20.32 20.32 20.32 20.32 20.32 20.32 20.32 20.32 20.32 20.32 20.42 20.32 20.42	7	12000.	55	0.544	0.789619	18.58	8.5	036F
9 16000 0.605 0.612 0.995374 19.73 19.73 6.6076 18000 0.635 0.690529 20.06	œ	14000.	5	0.580	0.993214	19.19	9.1	7.7235-06
0 18000. 0.635 0.632 0.994529 20.06 20.06 20.06 20.06 20.06 5.402E 1 20000. 0.655 0.648 0.973712 20.32 20.42 20.42 20.42 20.42 20.42 20.42 20.42 20.42 20.44 20	σ	16000.	9	0.612	0.995374	19.73	9.7	6,607E-06
1 20000 0.655 J.648 0.973712 20.32 20.32 20.32 5.625 2 22001 0.660 0.659 0.977973 20.65 21.01 5.625 3 22000 0.665 0.759 0.779 0.776 0.776 0.776 0.776 0.776 0.776 0.776 0.776 0.776 0.776 0.777 0.776 0.777 0.776 0.777 0.777 0.776 0.777 0.776 0.777 0.776 0.777 0.776 0.777 0.777 0.776 0.777 0.776 0.777	01	18000.	63	0.632	0.990529	20.06	20.06	CZE
2 22000 0.669 0.977973 20.65 21.65 21.65 21.65 21.65 21.65 21.61 21.01 21.01 5.536F 4 26000 0.725 0.718 0.739 0.736637 21.74 21.74 5.516F 5 28000 0.745 0.739 0.74547 22.74 21.74 5.516F 5 38000 0.745 0.750 0.745 0.746 0.746 0.746 0.746 0.746 0.746 0.746 0.746 0.746 0.746 0.746 0.746 0.747	=	20000.	65	0.648	0.973712	20.32	20.32	102E
3 24000. 0.685 0.691 0.975601 21.01 21.01 5.546 4 26000. 0.725 0.718 0.97667 21.41 21.01 5.5616 5 28000. 0.745 0.739 0.96837 22.06 23.94 6 30000. 0.745 0.760 0.940453 22.06 23.06 6.300 6 30000. 0.855 0.804 0.992315 22.06 22.78 9.300 9 3600. 0.865 0.804 0.992315 22.06 22.06 2.108 9 38000. 0.865 0.804 0.992315 24.01 1.704 0 40000. 0.945 0.968 0.99464 25.05 25.09 2.09 4 40000. 0.945 0.968 0.994542 26.49 26.49 26.49 1 46800. 1.540 0.98476 25.05 29.09 29.09 4 48000. 1.540 0	12	22000.	99	0.659	0.977973	20.65	20.65	325F
4 26000 0.725 0.718 0.976767 21.41 21.41 21.41 21.74	13	24000.	99	0.691	0.975601	21.01	21.01	5.536F-06
5 28000 0.745 0.739 0.7968637 21.74 21.74 5.294E 30000 0.760 0.760 0.973757 22.06 22.06 22.06 6.300E 7 34000 0.795 0.808 0.9940753 22.78 22.78 6.300E 8 36000 0.855 0.895 0.981283 22.78 22.78 8.477F 9 38000 0.885 0.895 0.992315 22.78 22.78 8.477F 9 38000 0.945 0.964 23.19 1.704F 1.704F 0 0.945 0.964 25.15 24.01 1.704F 24.01 1.704F 1 45000 0.964 25.15 26.49<	14	26000.	72	0.718	0.976767	21.41	21.41	5.561F-06
6 30000 0.760 0.760 0.973757 22.06 22.06 6.3000 7 34000 0.795 0.808 0.990253 22.78 22.78 22.78 4.775 8 36000 0.885 0.894 0.992315 24.01 24.01 1.7046 9 38000 0.885 0.994 0.9945 24.01 24.01 1.7046 0 40000 0.945 0.968 0.9945 25.05 25.05 2.1036 1 42500 1.210 1.075 0.985767 29.09 29.09 4.3366 2 46800 1.275 0.984426 30.79 30.79 4.3366 4 4800 1.51 1.51 0.984426 30.79 30.79 4.3366 4 4800 1.550 1.560 0.986951 32.27 5.9376 4 4800 1.630 1.641 0.987498 33.63 33.63 4.7356 4 4800 <td>51</td> <td>28000,</td> <td>74</td> <td>0.739</td> <td>0.368637</td> <td>21.74</td> <td>21.74</td> <td>5.294E-06</td>	51	28000,	74	0.739	0.368637	21.74	21.74	5.294E-06
7 34000 0.808 0.990253 22.78 22.78 22.78 22.78 22.78 22.78 3.19 1.3126 3.319 1.3126 3.319 1.3126 3.319 1.3126 3.319 1.3126 3.319 1.3126 3.319 1.3126 3.	16	30000.	76	0.760	0.973757	22.06	22.06	6.300E-06
8 36000. 0.855 0.836 0.932315 23.19 23.19 1.3126 9 38000. 0.885 0.894 0.992315 24.01 24.01 1.7046 9 40000. 0.945 0.968 0.9945 25.05 25.05 25.05 2.1036 1 42500. 1.110 1.075 0.985767 29.09 29.09 2.9596 2 45300. 1.275 0.985767 29.09 29.09 4.3367 4 4800. 1.573 1.411 0.984426 30.79 30.79 5.1316 4 4800. 1.585 1.560 0.981658 32.27 32.27 5.226 5 4800. 1.630 1.641 0.987913 33.63 33.63 4.7355 6 4800. 1.630 1.646 0.974998 33.69 33.93 33.93 5.1005 6 4920. 1.680 1.666 0.962926 33.93 33.93 5.1005	17	34000.	79	0.80R	0.990253	22.78	22.78	8.477F-06
9 38000. 0.885 0.894 0.992315 24.01 24.01 1.704F 0 40000. 0.945 0.968 0.9644 25.05 25.05 25.05 2.103E 1 42501. 1.110 1.075 0.985767 29.09 29.09 2.9599 2 45300. 1.260 1.275 0.986426 30.79 30.79 4.33E 4 4800. 1.573 1.511 0.984426 32.27 32.27 6.227E 4 4800. 1.585 1.560 0.986951 32.27 5.937E 5 48800. 1.630 1.641 0.987498 33.63 33.63 4.735E 6 48800. 1.630 1.646 0.974998 33.69 4.735E 7 49000. 1.666 0.962926 33.93 33.93 5.100E	6 0	36000.	85	0. A36	0.981283	23.19	23.19	1.312F-05
0 40000 0.945 0.968 0.99644 25.05 25.05 2.1036 1 42501 1.110 1.075 0.98542 26.49 26.49 26.49 2.9596 2 45300 1.275 0.985767 29.09 29.09 4.3367 3 46800 1.355 1.411 0.984426 30.79 30.79 5.1316 4 4800 1.573 1.51 0.984426 32.27 32.27 6.2276 5 4800 1.585 1.560 0.986951 32.63 32.63 5.9376 6 48800 1.630 1.641 0.987913 33.63 33.63 4.7356 7 49000 1.636 1.646 0.962926 33.93 33.93 5.1005		38000.	8	Ů . 894	0.932315	24.01	24.01	1.7046-05
1 42500: 1.016 1.075 0.985892 26,49 26,49 26,49 2,999999 2 45300: 1.260 1.275 0.985767 29.09 29.09 4.3367 3 46800: 1.355 1.411 0.984426 30.79 30.79 5.1316 4 4800: 1.570 1.531 0.981658 32.27 32.27 6.2276 5 4800: 1.585 1.560 0.969951 32.63 32.63 5.9376 6 4880: 1.630 1.641 0.987913 33.63 33.63 4.7355 7 4900: 1.680 1.666 0.962926 33.93 33.93 5.1005	50	*0000	94	0.968		25.05	25.05	2.1036-05
2 45300. 1.260 1.275 0.985767 29.09 29.09 4.336F 3 46800. 1.357 1.411 0.984426 30.79 30.79 30.79 5.131F 4 4800. 1.570 1.531 0.969951 32.27 32.63 32.27 5.27E 5 48200. 1.560 0.987913 33.63 33.63 33.63 4.735E 6 48800. 1.641 0.987913 33.69 33.63 4.735E 7 49000. 1.680 1.666 0.962926 33.93 33.93 5.100E		4 2500.		1.075	0.985892	56,49	•	2.95%-05
3 46800. 1.355 1.411 0.984426 30.79 30.79 5.131E- 4 48000. 1.570 1.531 0.981658 32.27 5.227E- 5.227E- 5.227E- 5.937E- 5.100E- 5.100E- <t< td=""><td></td><td>45300.</td><td>26</td><td>1.275</td><td>0.985767</td><td>60.62</td><td>Ġ.</td><td>4.33EF-05</td></t<>		45300.	26	1.275	0.985767	60.62	Ġ.	4.33EF-05
4 48000. 1.573 1.531 0.981658 32.27 32.27 6.227 5 48200. 1.560 0.96951 32.63 32.63 5.9376- 6 48800. 1.630 1.641 0.987913 33.63 33.63 3.9735- 7 49000. 1.635 1.646 0.974998 33.69 4.7355- 8 49200. 1.660 1.666 1.665 33.93 33.93 5.1005-	23	4680G.	35	1.411	0.984426	30.79	34.79	
\$ 48200. 1.565 1.560 0.969951 32.63 32.63 5.9378- 6 48800. 1.630 · 1.641 0.987913 33.63 33.63 3.9735- 7 49000. 1.635 1.646 0.974998 33.69 33.69 4.7355- 8 49200. 1.680 1.666 0.962926 33.93 33.93 5.1005-		48000	53	1.531	0.981658	32.21	32.27	222E-
6 48800. 1.630 · 1.641 0.987913 33.63 33.63 3.9735- 7 49000. 1.635 1.646 0.974998 33.69 33.69 4.7355- 8 49200. 1.680 1.666 0.962926 33.93 33.93 5.1005-		48200°	58	1.560	15669670	32.63	2	93TE-
7 49001. 1.635 1.646 0.974998 33.69 4.7355- 8 49201. 1.680 1.666 0.962926 33.93 33.93 5.1005-	26	48800.	63	_	0.987913	33.63	ë.	- 1
• 1.680 1.666 0.962926 33.93 33.93 5.100E-	27	. 60004	63	1.646		33.69	3.	1
	28	49200.	1.680	1.666	.96292	٠,	3.9	- 1

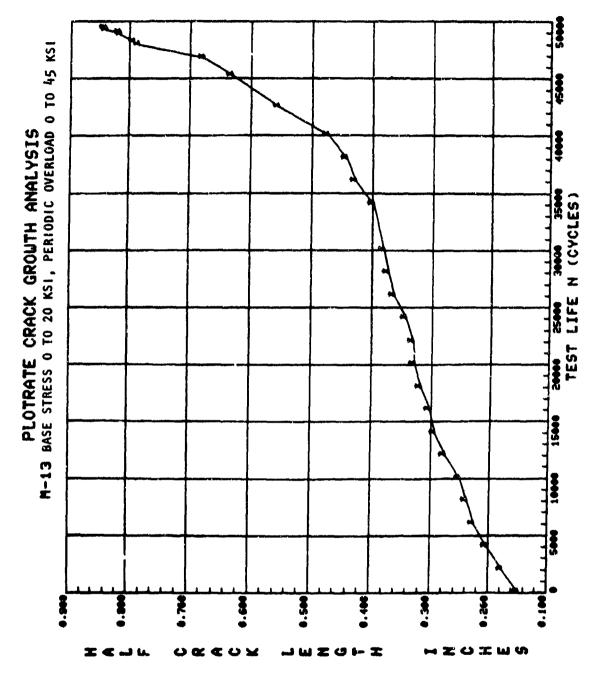


Figure 27. Crack growth curve for test M-13.

TABLE 25. DATA TABULATION FOR TEST M-14

BASE STRESS = 6 TO 20 KSI. PERICRIC PVERLMAD = 6 TO 40 KSI SPECIMEN NO.: 4-14

= 7.1 # d							
		PMAX		TEST FPEUm 6.	6.00 HZ.		
IV I PORMEN	ENVIRONMENT CONDITION:	S AMRIENT AIR					
, O.	CYCLES	A (MEA SLHED)	A (REGRESSICN)	MULT. CORR. COEFF	X-MAX	DELTA K	04 /DN
	•	0.310	0.315	0.965969	14.09	98.8	1.6735-06
~ (2505.	0.345	9.323	0.981299	14.28	10.00	1.358F-06
η,	29500	0.355	0.393	0.988968	15.74	11.02	1.2545-06
•	51700.	0.445	0.448	0.993772	16.84	11.79	1.2586-06
ر ،	70100	0.455	0.493	0.998563	17.68	12.37	1-2465-06
C I	90200	0.550	0.548	0.998972	18.54	13.05	279
- (112800.	0.610	0.607	0.994322	19.66	13.76	7
ec (121000	0.625	0.629	0.994012	20.02	16.01	1.5215-06
.	131000.	0.650	0.658	0.995351	20.49	14.34	1.669F-06
01	141000.	0.70	0.693	0.994295	21.03	14.72	1.77F-06
(151000.	0.730	0.728	75166.0	21.57	15, 10	146F
71	161000	0.775	0.771	0.993158	22.23	15.56	2.525-05
<u>.</u>	1 7 1000.	0.810	0.818	0.997247	25.92	16.04	3-079F-06
* (184500.	0.915	910.0	0.997971	24.29	17.01	4.07F-06
<u>.</u>	192000	0.975	0.977	0.994242	25.17	17.62	5.080F-06
9 !	200000	1.070	1.066	0.993236	26.38	18.47	6.208F-06
- 6	20.000	1.145	1.171	0.99191R	27.76	19.43	3 R 2 E
0 (211370.	1.235	•	0.991829	28.50	19.95	1.0276-05
7 6	21 4000.	1.275	1.280	0.995167	29.15	20.41	1.3126-05
67	2165 CD.	1.345	1.342	0.962644	29.93	20.95	1.9616-05
17	21 9000.	1.420	1.434	0.986178	31.09	21.76	7. 714F - 05
22	220900.	1.510	1.543	0.989359	32.42	22, 70	71.15
23	222600.	1.715	1.670	0.989440	0		4616.
74	226101					•	へつしょうときと

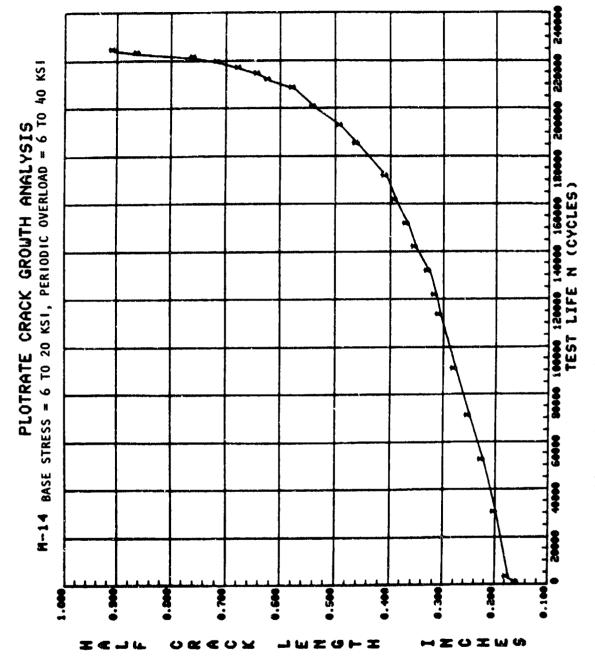


Figure 28. Crack growth curve for test M-14.

TABLE 26. DATA TABULATION FOR TEST M-15

の日本の中のでは、100mmのでは、1

RASE = 21 TO 30 KSI PERIODIC CVFRLOAD = 21 TO 40 KSI 4-15 SPECINEN NO.:

			NO/VO	2.	2.	-		2.	2.	3.281E-06	4	ئى :	9	Ġ		2.7786-05			•9		•	9	7.	•]-	-
			DELTA	6.34	6.59	7.21	7.69	8.18	8.74	9.17	9.67	10.25	10.60	11,39	11.87	12.02	12.12	12.38	12.72	13,18	13.54	13.78	13.99	14.22	14.62	15.05
	6.00 HZ.			21.12	21.97	24.02	25.64	27.28	29.15	30.56	32.24	34.15	35.34	37.98	39.55	40.05	40.39	41.26	42.41	43.94	45.12	45.92	46.63	47.40	48.75	50.15
ANE O.O EN.	TEST FREG= 6.00		MULT. CORR. COEFF	0.991682	0.991384	0.996727	0.992130	0.998202	0.997203	0.997523	0.995701	0.996264	0.989216	0.986656	0.939224	0.933219	0.972333	0.973995	0.977290	0.975680	0.968828	0.975443	0.966886	0.996353	0.998859	0.999415
W= 6.000 IN.			A (REGRESSION)	0.314	0.340	0.406	0.462	0.522	965.0	0.651	U.723	0.807	0.862	0.988	1.065	1.090	1.107	1.152	1.211	1.291	1.353	1.396	1.435	1.476	1.549	1.625
9= 0.250 IN.	P MA X=	ROOM ANRIENT		0.313	0.355	0.415	0.460	0.515	0.555	0.655	0.710	0.810	0.855	96.0	1.030	1.060	1.075	1.160	1.210	1.265	600	1.410	1.420	~	1.555	1.625
		CONDITION:	CYCLES	ċ	5500.	24500.	4:000.	57070.	73500.	83500.	9400.	104001	1090th.	11 7000.	120000.	120500.	121000.	1215·M.	122000.	122500.	123000.	123300.	123600.	124300.	124400.	124700.
CCT SPECIMEN	= Z = Z	ENV [PONMENT	Ç.	_	~:	m	4	'n	£	~	œ	6	2	1	15	13	14	51	9	11	œ ~	6.	20	21	25	23

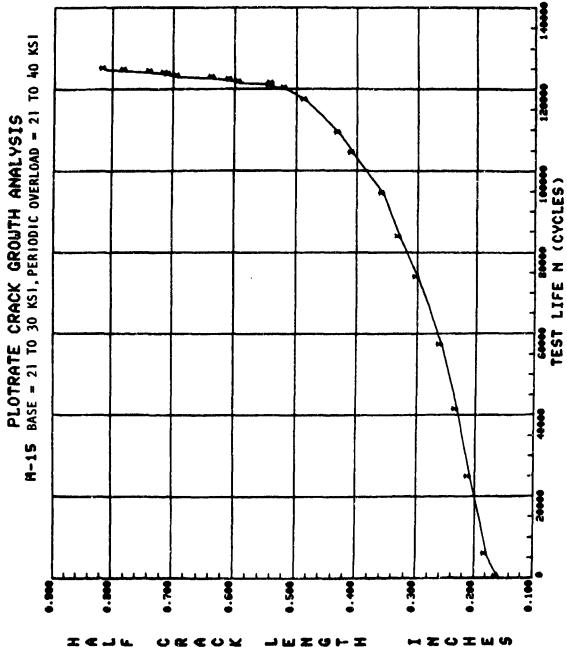


Figure 29. Crack growth curve for test M-15.

TABLE 27. DATA TABULATION FOR TEST M-16

BASE STRESS 0 TO 20 KSI, OVERLOAD -6 KSI TO +20 KSI SPECINEN NO.: M-16

Nº 6.000 IN. ANE 0.0 IN. B= 0,250 IN. CCI SPECIMEN

TEST FREG. 6.00 HZ.

ENVIRONMENT CONDITION: ANDIENT AIR

PHAX=

A LMEASURE	AIKEGRESSION)	MULT. COMB. COEFF	K-MAX	DELTA K	NG/VO
	0.303	0.993037	13.61	17.96	1.1%6-05
	0.383	0.995056	15.54	20.21	2-205F-05
•	***	0.995297	15.26	29.77	2-395E-05
•	0-455	0.994935	16.97	22.07	2.7666-05
	0.483	0.993698	17.48	22.13	3-092E-05
i	0.512	0.232600	18.02	23.42	3-452E-05
	0.551	0.999746	18.70	24-30	3.947E-05
	0.590	0.999274	19.36	25.17	4-389E-05
	0.686	0.999105	20.92	27.20	5-653E-05
	0.750	0.998860	21.91	28.49	6.714E-05
	0.828	0.998353	23.07	29.99	8-129E-05
	106.0	0.999752	24-12	31,36	9-468E-05
	0.982	161666*0	25.25	32.82	1-1206-04
	1.051	0.999256	26.18	34.03	1-2836-0
	<u>1</u> .117	0.999325	27-05	35-17	1-443E-04
	1.148	0.999123	27.96	36.37	1.6546
	1.259	0.999540	28.89	37.56	1.651E-04
	1,335	0.999632	49-85	38-80	2.032E-04
	1.405	200666*0	30.72	39.93	2.283E-04
	1.471	966866.0	31.54	41.00	2.4%E-04
	1.538	0.99871	32.37	42.06	2-666E-04
	1.603	0.996745	33.15	43.10	2-9146-04
	1.663	169866-0	33.90	14.07	3-1655-04
	1.722	1,5995.0	34.62	45.00	3-4096-05
	1.782	999666	35.35	45.96	3-6546-04
	1.844	0.999683	36.10	46.93	3.9976-04
	1.909	0.998763	36.90	47.97	4-4906-04
	1.961	0.999453	37.78	49.12	5-052E-04

TABLE 27. DATA TABULATION FOR TEST M-16 (CONCL)

TEST FREQ= 6.00 HZ. . BASE STRESS 0 TO 20 KSI, OVERLOAD -6 KSI TO +20 KSI AN= 0.0 W= 6.000 IV. ENVIRONMENT COMDITION: AMBIFMI AIR B= 0.250 1N. PHAX= SPECIMEN NG.: M-16 CCT SPECIMEN PMIN=

		AND LINE ALK					
. NO.	CYCLES	A (MEASURED)	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	0 N UN
62	10796.	2.050	2.055	0.999672	39.65	50.30	5-619E-04
30	10860.	2.146	2,138	6.998936	39.73	51.65	0-067E-04
31	10920.	2.220	2.216	0.999262	02.05	52.32	6-50/404
32	10970.	2.285	2.284	9586560	41.56	54.03	6 -6 19E -04
33	11020.	2.345	2-350	0.998316	42.43	55.14	7.3 46F-04
35	11070.	2.425	2-422	0.996653	43.36	56.33	8 -382E-04
35	11116.	2.405	2.490	154666.0	44.26	51.53	なったがにして
36	11150.	2.570	2.570	0.999463	45,32	58.92	1-0555-03
37	11180.	2.640	2.636	628866-0	46.22	60.09	1-262E-03
38	11210.	2.710	2.716	0.998881	47.33	61,53	1-4446-03
36	11246-	2-600	2.805	9246560	48.59	63.17	1-684E-03
40	11260.	2.680	2.874	0.999634	49.60	64.48	1 -369E-03
14	11280.	2.950	2.953	6.999213	50.19	66.02	2-114E-03
25	11300-	3.040	3.041	0.997916	52.14	67.78	2.499E-03
6 3	11310.	3.035	3.089	0.949368	52.90	68.76	Z-840E-33
*	11320.	3.145	3-147	0.998919	53.82	96.69	3-300E-03
45	11330.	3.215	3.213	0.999604	54.91	71.38	3.786E-03
3	11340.	3.290	3.282	0.987512	56.08	12.91	5-371E-63
+ 7	11350.	3.390	3.384	0.991337	57.93	15,31	6-6215-03
46	11360.	3.495	3.529	0.994162	25.09	78.74	8 -979E-03
49	11370.	3.740	3.738	0.995866	64.63	84-28	1-2995-02

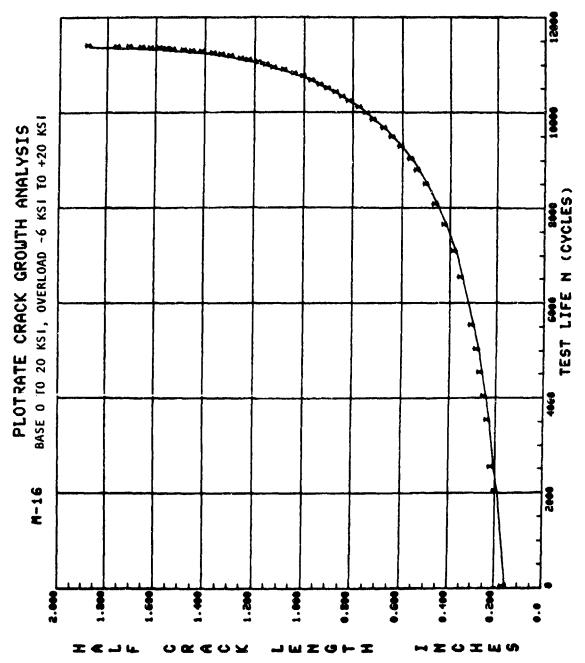


Figure 30. Crack growth curve for test M-16.

DATA TABULATION FOR TEST M-17 TABLE 28.

4-17

SPECIMEN NO.:

DELTA K 9.71 11.06 11.98 12.35 12.35 13.24 13.24 13.24 13.26 13.26 13.26 13.98 13.98 14.60 15.90 16.90 BASE STPESS = 6 TO 20kSi. PERICDIC CVERLUAD = -6 KSI TO +20 KSI K-MAX 13.86 15.81 16.62 16.88 17.12 17.32 17.65 17.57 19.25 19.65 19.97 23.03 18.° 18.5 20.34 20.85 21.42 22.50 23.57 24.20 24.99 TEST FREO= 6.U0 HZ MULT. CORR. CUEFF 0.999958 ż 0.999899 0.977275 0.986447 0.987656 0.988799 0.997064 0.994487 0.959726 0.467877 0.958787 0.995881 0.997403 0.982298 0.990496 0.961774 0.969851 0.983531 J.995411 0.993017 0.996744 0.992907 AA= 0.0 A I REGRESSION! M= 6.000 IN. 0.492 1.488 0.627 0.718 0.875 0.964 0.305 0.450 0.551 J. 5A3 0.396 0.437 0.463 0.474 0.563 0.607 0.649 0.682 0.756 0.796 0.863 0.907 AMBIERT AIR A (MEA SLRED) 0.455 0.555 0.760 0.825 0.850 0.630 0.505 0.795 0.440 0.465 0.560 0.675 0.720 0.465 0.465 0.545 0.650 8- 0.250 IN. P MA X= ENVIRONMENT CONDITION: 9600. 9500. 16500. 11000. 11500. 2500. 3000. 6466. 66.00. 70.00. 5000. 6200. 4000 5000. 4500. SPECIMEN 20 21 22 23 • PHINE S

3.979E-06 2.162E-05 2.346E-05 2.289E-05 2.496E-05

2.190E-05 1.789F-05 1.854E-05

1.956-05 2.029F-05 2.207E-05 2.464E-05 3.268E-05 3.429E-05 3.656-05 3.656-05

7. 100F -05

5.125E-05 5.794E-05 4.3575-05

6.6165-05

8.08

25.83 26.83 27.16 27.76 28.15 28.82

0.995739

0.990687 0.993929

1.100

1.026

1.025 1.105

5500. 6200. 16500.

600c.

1.115

1.125 1.292

1.265

1000

9.43 9.01

DATA TABULATION FOR TRST M-17 (CONCL) TABLE 28.

	:			NO/ 90	1.1376-04			5596-	ŧ	1.7796-04		2.195E-04	655	96 3F	357E	3.857E-04	€83€	S	O	425E	1.092E-03	1.406E-03	1,8346-03	3-1036-03	226F		423E
				DELTA K	21.04	21.67	22.16	22.50	23,46	24.00	24.59	5.2	26.54	27.48	28.55	29.61	30.82	32.22	33.80	35.26	37.01	38,23	39.65	6.0		٠ĕο	46.36
KSI TO +20 KSI	•	6.00 HZ.		K-MAX	30.06	30.96	31.66	32.72	33.52	34.28	35.12	36.10	37,91	39.26	40.79	42,30	44.03	70.94	48.29	50.38	52.86	54.62	56.64	58.54	60.59	60.49	70.51
20 KSI,PERICDIC CVEPLOAD = -6 KS	AK= 0.0 IN.	TEST FREO= 6		MULT. CORR. COEFF	99988	0.999595	0.998179	0.997413	0.996383	0.995185	0.995978	0.997792	0.998217	0.998738	0.999242	0.998239	0.999355	0.998221	0.997312	0.997882	0.995708	0.995809	0.991717	0.963003	0.981054	0.988243	0.995522
* 6 TO 20 KSI, PERI	W= 6.000 IN.			A CREGRESSION)	1.352	1.424	1.441	1.56.7	1.632	1.695	1.764	1.844	1.991	2.101	2.223	•	•	•	•	•	3.087	•	٠	3.421	3.531	3.704	3.983
AASE STRESS	0.250 IN.	a X TW d	AMBIENT AIR	4 (MEA SURED)	1.350	1.425	4.	1.565	1.640	1.665		æ.	1.950	~	•	ω.	2.476	2.615	٠.	•	•	₹	~	4,	Š	•	6.
4-17	æ		CONDITION:	CYCLES 17300.	17500.	17800.	18000.	18300.	18500	18700.	18000.	19160	19401.	19600.	19790.	19970.	20140.	20300.	20440	20540	20630.	20680.	20720.	20750.	207703	20790.	20810.
SPECIMEN NO.:	CCT SPECIMEN	=71 x q	FNV I RONMENT	, 65 65	30	31	35		34	ا ا	94	3.7	e.	39	40	+1	6 2	£ ;	* (4.5	4		SC	0	C Y	15	,

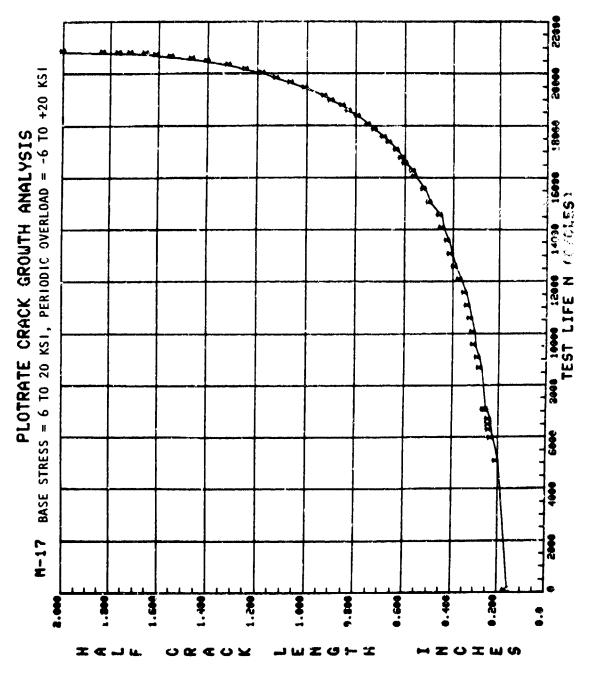


Figure 31. Crack growth curve for test 30.17.

TABLE 29. DATA TABULATION FOR TEST M-18

84 SE STPESS = 28 TO 40KSI . (ERICDIC CVERLOAD = -12 TO +40 KSI £ -- 7 SPECIMEN NO.

=71 Hd							
,		9 MA X =		TEST FRED= 6	6.00 HZ.		
ENV (FJAMENT	NT CONDITION:	AMPLENT AIR					
, Or	CYCLES	A (MEA SLRED!	ALREGRESSICNI	MULT. COFF. CHEFF	X - '4 A X	DELTA K	NG/ 40
_	90°	0.250	0.291		27.06	''	3.8435-05
2	500.	0.330	1.318	0.962512	28.31	8,49	2.273E-0
٣	1000	0,340	0.320	0.959551	28.81	8.64	1.4815-05
4	2000.	0.355	0.356	0.980147	29.96	8.99	1.3225-05
\$	3000	0.375	3.373	0.995097	30.69	9.21	1.2255-05
9	5000	0.440	0.432	0.996104	33.07	4.92	2.0266-05
7	6500.	0.450	0.500	0.995784	35.60	10.68	2.902E-65
uc	7800.	0.580	J. 5P5	0.995644	38.55	11.57	3.9196-65
G	9RNO.	0.660	0.668	0.998101	41.28	12,39	5.3716-05
10	9300.	0.720	0.728	0.989783	43.14	12,94	7.1675-05
11	. 0096	0.760	3,766	0.996337	44.30	13.29	8.563E-05
12	.0066	0.810	0.817	0.996326	45.83	13.75	1.0325-04
13	10200	0.855	0.683	0.995960	47.72	14.31	1.2025-04
5 1	10400	0.925	0.933	0.994227	49.14	14.74	1.4236-34
1.5	10600.	0.955	0.903	0.993029	50.78	15.24	1.6946-04
16	10700.		1.023	0.995312	51.59	15.48	1.7736-04
11	109001	1.105	1.105	0.981683	53.78	16.13	1.7105-04
18	110001		1.142	0.980473	54,75	16.42	1.7475-04
19	11100.		1.177	0.979442	25.67	16.70	1. 78004
20	11200.	1.165	1.203	0.976929	56.35	16.91	1.7636-04
21	11350.	1.260	1.253	0.992437	51.62	17.29	2,3135-04
22	11450	1.300	1.303	0.994275	58.88	17.66	2.935F-04
23	11500.	1.335	1,337	0.997423	59.74	17.92	3, 1505 - 04
						, , ,	

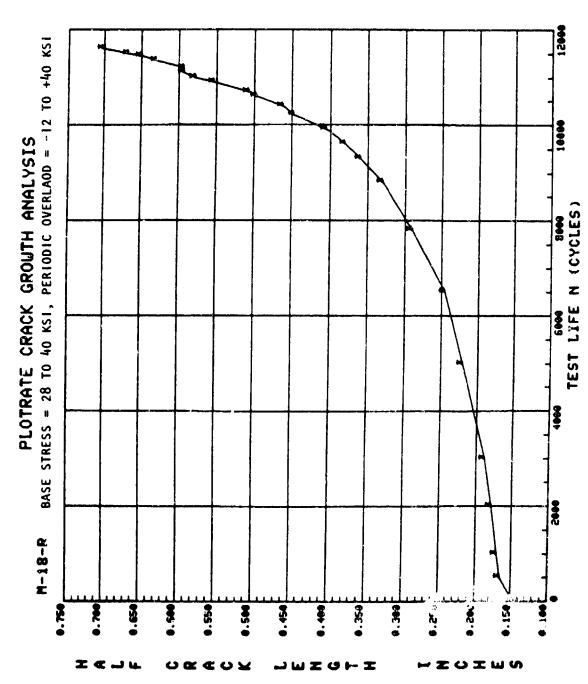


Figure 32. Crack growth curve for test M-18-R.

TABLE 30. DATA TABULATION FOR TEST M-19

				DA/DN	8	. 543E-	096.E	1,9046-05	1.697F-05	1.756E-05	1.380E-05	. 063F	2.6386-05	2.959E-05	3.333E-05	3.859E-05	4.677F-05	5.672F-05	5.777E-05	6.12TF-05	6.616F-U5	7.000F-05	7.249F-05	7.559F-05	7.996E-05	8.0625-05	8.109E-05	9.413F-05	1.0196-04	1.05%-04	1.1535-04	1.2615-04
				DELTA K	4	25.20	26.25	27,05	27.83	27.72	28.32	~	31.49	32,42	33.47	34.43	35.59	37.03	38.08	34.76	39.48	40.13	40.92	41.35	42.18	45.94	43. 79	44.57	45.57	46.33	47.12	47.98
KSI		6.00 HZ.		K-4AX	20.2	21	21	22.55	23.19	23.10	23.60	24.82	26.24	27.02	27.89	28.69	29.66	30.85	31.74	32.30	32.90	33.44	34.10	34.46	35.15	35.78	36.49	37.14	17.97	38.61	39.27	39.98
20 KSI, SINGLE OVERLOAD +30 KSI to -6 I	Ah 0.0 IN.	TEST FREU= 6		MULT. CARP. COEFF	191161	0.996318	0.996727	0.977831	0.978077	0.966317	0.980926	0.995246	0.994702	0.995362	0.996066	0.993440	0.995983	0.997178	0.996347	0.995094	0.992381	.99639	0.993535	0.996342	0.497629	0.998393	0.1966.0	959686*0	0.988977	0.988465	0.987709	0.987051
O TO 20 KSI, SINGLE	W= 6.000 IA.			A ! REGRESSI Ch!	0.290	0.311	0.337	6.308	.0.379	0.376	0.3%2	0.453	0.483	0.512	0.545	0.576	0.615	0.664	0.701	0.725	0.752	0.775	0.805	0.871	0.853	0.862	0.916	0.947	0.987	1.019	1.051	1.087
BASE STRESS = 0	0.250 IN.	PMAX#	AMBIENT AIR	A (MEA SLRED)	0.250	~	0.335		•		n	•	4	S	0.550		0.615			0.730							or .	Ġ.	Or .	•	1.065	1.085
4-19	er er		CONDITIONS	CYCLES	ċ	824.	1550.	2000.	2500.	. 1052	3101.	*20I*	5501.	. 100e	. 1059	7061.	7501.	8001.	8301.	8501.	8701.	. 1068	9101.	9201.	9401.	9601.	9801.	10001	10201	10351.	10501	10651.
SPECIMEN NO.:	CCT SPECIMEN	=71Wd	ENVIRONMENT	.01		7	æ	4	Ś	• ;	_	œ	σ	<u>.</u>	11	12	13	*	1 5	16	21	SC (61	50		22	Ę,			2. 9.	2.7	& 2

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TABLE 30. DATA TABULATION FOR TEST M-19 (CONT)

BASE STRESS = 0 TO 20 KSI, SINGLE OVERLOAD +30 KSI TO -6 KSI

•		P MA X=		TEST FREG= 6.	6.00 HZ.		
ENVIRONMENT	COMPITION:	AMBIENT AIR					
, C.	CYCLES	A (MEA SLRED)	A (P G G R E S S I C N)	MULT. CORR. COEFF	K-MAX	DELTA K	NO/ VO
62	10801.	1.120	1.128	2	40.80	48.96	1. 2965 - 04
30	10901	15	1.150	0.994530	41.23	14.64	374F-
31	loul.	1.185	1.182	0.993887	41.85	50.22	1.3936-04
32	11101.	1.205	1.211	0.987620	42.40	50.88	1.4966-04
	11201.	1.245	1.238	0.986925	42.93	51.52	638E
5	10511	1.260	1.271	0.986344	43.57		8375
35	11351.	1.255	1.291	0.962466		2.7	1.8265-04
36	11401.	1.315	1.308	0.979623	44.27	3	₹96 1
37	11451.	1.320	1.331	0.990745	44.69	3.6	182E-
38	11500.	1.345	1,353	0.977170	45.12	4.1	981E-
5 :	11550.	1.375	1.370	0.974356	45.44	5	2.004E-04
0,4	11690.	•	1.429	0.976594	46.53	55.83	2.203E-04
	11750.	4	1.456	0.975584	47.03	56.43	2.251E-04
24	11800.	4	1.478	0.471796	47.64	56.93	2.1136-04
. 43	11850.	1.505	1.498	0.982762	47.81	57.37	2.192E-04
*	11900.	1.525	1.522	0.991851	48.24	-	2.471E-04
. .	1 2000.	1.560	1.566	0.999177	10.65	58.88	2.310F-04
Q (12200.	Φ	1.670	0.999380	50.96	61.16	
	12300.	1.730	1.731	967666*0	52.08	62.49	3.158E-04
X (12400.	1.754	1.798	0.999663	53.31	63.98	3.509E-04
J (125181.	.87	1.869	0.999942	54.61	65.53	3.804F-04
C ;	12600.	σ.	1.950	156666*0	56.10	7.3	4,143E-04
21	12700.	•	2.034	0.999528	57.66	69.19	4.562F-04
25	12800.	٦.	2.127	0.999535	59.38	. ~	35.36
53	12900.	?	2.229	11.999327	61.31		1
54	13001.	•	2.349	0.999644	63.60	76.32	6. 6.70E=04
5,5	13090.	2.470	2.474	1986660	66.05	79.26	• •
26	77.17.	7				١	,

TABLE 30. DATA TABULATION FOR TEST M-19 (CONCL)

•

BASE STRESS = 0 TO 20 KSI, SINGLE OVERLOAD +30 KSI TO -6 KSI SPECIMEN NO.: 4-19

AIREGRESSICN) PULT. CORR. COEFF K-MAX DELTA K 2.730 0.995597 71.31 85.57 3.007 0.992298 77.42 92.90 3.165 0.991471 81.18 97.41 3.334 0.993712 85.47 102.57 3.491 0.999784 92.57 111.08 3.725 0.99994 96.82 116.18	č	;	W= 6.000 IN.	AA 0.0 IN.			
A(REGRESSICN) MULT, CORR, COEFF K-MAX DELTA K 2,730 0.995597 71.31 85.57 2,866 0.994589 74.23 89.08 3,007 3,165 0.991471 81.18 97.41 3,334 0.999784 85.47 102.57 3,491 0.999784 92.57 111.08 3,725 0.99994 96.82 116.18	D M C X =			CENT PRECE O	• 74 no•		
ACREGRESSICN) MULT. CORR. COEFF K-MAX DELTA K 2.730 0.995597 71.31 85.57 2.730 0.994589 74.23 89.08 3.007 0.992298 77.42 92.90 3.165 0.991471 81.18 97.41 3.334 0.999784 85.47 102.57 3.491 0.999784 92.57 111.08 3.725 0.99994 96.82 116.18	A	FNVIRGNMENT CONDITION: AMBIENT AIR					
2.730 0.995597 71.31 85.57 2.866 0.994589 74.23 89.08 3.007 0.992298 77.42 92.90 3.165 0.991471 81.18 97.41 3.334 0.999747 85.47 102.57 3.491 0.999784 92.57 111.08 3.725 0.99994 96.82 116.18	ACME		(REGRESSION)	MULT. CORR. COEFF	K-M-X	DELTA K	DA /DN
7.866 0.994589 74.23 89.08 3.007 0.992298 77.42 92.90 3.165 0.991471 81.18 97.41 3.334 0.990728 85.47 102.57 3.441 0.993712 89.77 107.72 3.588 0.999784 92.57 111.08 3.725 0.99994 96.82 116.18	7		2.730	195591	71.31	85.57	1.112E-03
3.165 3.165 3.334 3.491 3.598 0.999784 92.57 102.57 101.08 3.725 0.999994 96.82 116.18		25.0	2.866	0.994589	74.23	89.08	1.407E-03
3.165 0.991471 81.18 97.41 3.334 0.990728 85.47 102.57 3.491 0.999784 92.57 111.08 3.725 0.99994 96.82 116.18		200	3.007	0.992298	77.42	95.90	1.9096-03
3.334 0.990728 85.47 102.57 3.491 0.999784 92.57 111.08 3.725 0.999994 96.82 116.18		, c	3,165	0.991471	81.18	97.41	2.6566-03
3.441 0.993712 89.77 107.72 3.588 0.999784 92.57 111.08 3.725 0.999994 96.82 116.18			3.334	0.990728	85.47	102.57	3.771E-03
3,588 0,999784 92,57 111.08 3,725 0,999994 96,82 116,18	3,6		3,491	0.993712	11.68	107.72	4.985E-03
3,725 0,99994 96,82 116.18	3.5	5	3,588	0.999784	92.57	111.08	6.3466-03
	3.7	52	3,725	0.99994	96.82	116.18	7. 598E - 03

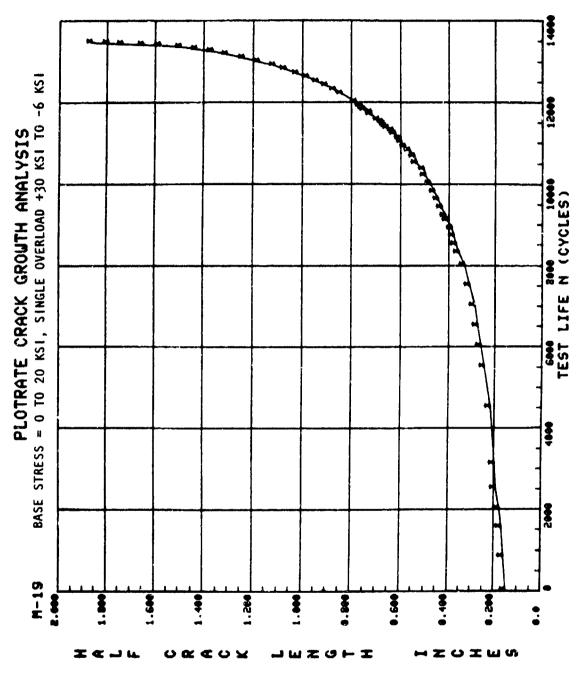


Figure 33. Crack growth curve for test M-19.

TABLE 31. DATA TABULATION FOR TEST M-20

SPECIMEN NO.: M-20-R RASE STRESS = 0 - 20 KSI,MMLTIPLE LOAD RETARD. = -6.0 - 30 KSI

. 5H 00.8 TEST FREQ = AN = 0.0 -IN. R =-0.200 W = 6.000.IN. 45.00 KIPS ENVIRONMENT CONDITION: AMMIENT AIR 8 = 0.250 IN. = XYMd SHIN 00.6- = NIME CCT. SPECIMEN

DA/DW	1.1596-05	6.084E-07	-5.885E-07	9.787E-06	1.669E-05	1.816E-05	2.518E-05	3.346E-05	3.928E-05	4.512E-05	4.863E-05	5.185E-05	5.912E-05	6.8735-05	7.814E-05	9-393E-05	1-1276-04	1.401E-04	1.9156-04	2.455E-04	3.3346-04	4.435E-04	5.107E-04	5.327E-04	4.579E-04	4.547E-04	3.459E-04	3.136E-04
DELTA K	24.79	25.33	25,31	29.15	33.29	34.63	36.25	38.60	40.03	41.87	43.79	45.39	46.37	48.14	49.87	52.25	54.46	57.10	59.47	62.12	64.33	67.39	69.26	71.63	73.08	74.25	74.38	76.31
K-MAX	20.66	21,11	21,09	24.30	27.74	28.86	30.20	32.16	33,34	34.90	36.49	37.83	39.65	40.12	41.56	43,54	45.39	47.58	49.56	51.77	53.60	56.16	57.71	69.65	06.09	61.97	65.49	63.60
WULT. CORR. COEFF	0.994308	0.936249	0.959168	0.966123	0.987358	0.994109	0.985810	6244830	0.988584	\$0.989604	0.993038	\$393660	0.94286)	0.995804	611456.0	0.997233	0.994615	0 > 992584	1.995551	0.997527	130986.0	0.992311	0.99.039	0.986646	0.981713	159066.0	0.999166	0.995031
A (REGRESSION)	0.301	0.314	91.0	0.415	Ú. 539	0.582	0.637	0.719	0.771	0.841	0.916	0.60	1.020	1.094	1.167	1.270	1.268	1,486	1.593	1.714	1.914	1.933	2.037	2.143	2.20A	2.259	7.291	2.348
ALMEASURED)	0.400	0.4.0	052.0		6.520	0.570	0.650	012.0	0.745	0.860	0.020	C 4.0 * C	0.00	1.090	1.155	1.290	1.345	1.470	1.585	1.705	1.300	1.945	2.010	2.175	7.235	2.245	2.795	2.150
CYCLES	•	1000.	.2500.	1800C.	23200.	24500.	25 999.	27600.	28400	29300.	30,000	30500	31100.	11700.	322.30.	32900.	31300	33400	16025	34500.	34700.	.0067	35000.	35100.	35150	35 200	35,50.	*05k5k
NO		~	~	4	ď	4	-	Œ	•	<u> </u>	=	7	13	7.	7.	٤.	17	6 11	10	20	21	22	23	5 2	52	%	F - (88

TABLE 31. DATA TABULATION FOR TEST M-20 (CONCL.)

SPECIMEN NO.: 4-20-R RASE STRESS = 0 - 20 KSI, MILTIPLE LOAD RETARD. = -6.0 - 30 KSI

DEIN = -0	-9.00 KIPS	PMAX = 45.	45.00 KIPS R	=-0.200	TEST FREG	E 6.00 HZ	•	
NVIRONMENT	ENVIRONMENT CONDITION:	AMBIFNT AIR						•
- CM	CYCLES	A (MFASURED)	A (REGRESSION)	HULT.	MULT. CORR. COEFF	X-MAX	DELTA K	M0/40
53	35450.	2.410	2.406	1	0.994586	64.73	77.67	3.365E-04
30	35500.	2.430	2,438	_	0.997320	65.35	78.42	3.5676-04
31	35 500.	2.510	2.513	~	0.996876	66.83	80.20	4-546E-04
32	35650.	2.565	2,558	_	0.998241	67.74	81.29	5-190E-04
33	35700°	2.605	2.614	_	0.998686	68.89	82.66	5.946E-04
34	15750.	2.690	2,675		0,998851	70.14	84,17	6.750E-04
35	35800.	2.745	2.744		0.999269	71.60	85.92	7.750E-04
36	35950.	2.825	2.925	_	0.997875	73.34	88.01	9.303F-04
37	35900,	2.920	2.917	-	0.997048	75.37	90.06	1.1556-03
33	35940.	3.030	3.039	_	0.04660	78.17	93.80	1.509F-03
39	35990.	3,155	3.166	_	0.996057	81.20	97.44	2.012E-03
- 66	360204	3.285	3.294		0.994727	84.42	101.30	2.7156-03
+ 1	36040.	3.185	3.405		0.995114	R7.38	104.85	3.5605-03
42	16055.	3.500	1.513		0.997930	90.37	108.45	4-427E-03
4 3	36065.	3.505	3.601	_	0.999874	92.97	111.56	5.327E-03
77	36075.	3.715	3.715	_	0.999789	96.51	15.81	6.0856-02

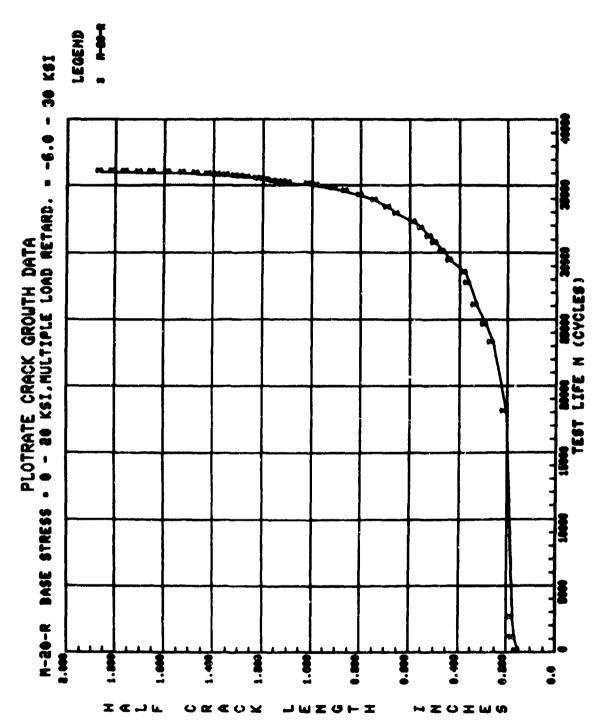


Figure 34. Crack growth curve for test M-20.

TABLE 32. DATA TABULATION FOR TEST M-21

BASE STRESS = 0 TO 20 KSI, PERIODIC OVERLOAD +40 KSI TO -12 KSI SPECIMEN 40.: M-21

PMIN= ENVIPONMENT							
ENV [PONMEN]		P MA X=		TEST FREU= 6.	6.1)(1 HZ.		
ç	COND 1 T TON:	AMRIENT AIR					
ָּהָרָיִבְּיִרָּיִבְּיִרְיִּבְּיִרְיִּבְּיִרְיִּבְּיִרְיִּבְיִרְיִּבְּיִרְיִּבְּיִרְיִּבְּיִרְיִּבְיִרְיִּבְּי	CYCLES	A (MEA SLRED)	A (PEGRESSICK)	MULT, CORR. CORES	× × ×	4 + 0	
_	c	0.320	0.320	786666	70 81	-	. 3257 AT
~	2000.	0.375	0.370	0.99568	20.14	*O•O*	1. 3275 - 05
•	3000	0.405	0.4.0	0.984.294	27 16	70.07	1.5405-05
*	* 000 *	0.435	0.442	0,310.10	33 30	06.42	1.3645-03
ĸ	5025.	0.455	0.478	01.000.11	07.22	30.04	1. 61 26 - 05
•	45.00	313	200	78/184-0	67.57	31.40	1.656E-05
) 	2636	0.510	0.576	0.989047	24.35	33.49	1.598E-05
٠,	.6263	0.560	0.559	0.487805	25.12	34.54	1.4505-05
10 (9000	0.00	0.594	0.987397	25.91	35.63	1.4326-05
~ (10500	0.645	0.641	0.989029	26.95	37.06	1.525F - 05
2:	12000.	0.670	0.683	0.991426	27.84	38.27	1.6485-05
-	13500.	0.745	0.733	0.992718	28 . 8 7	39, 70	1.966F-05
21	14500	0.765	0.773	A545494	29.68	40.81	2, 1785 - 05
5 ;	15500	0.820	0.818	0.985533	30.56	42.02	2. 752F - 05
5 (16500.	0.87%	0.874	0.988940	31.64	43.50	3.067F-05
<u>.</u>	17500	0.925	0.034	0.982561	32.77	45.06	4.152F-05
9 :	18500.	1.045	1.019	0.988872	34.33	47.20	5.281F-05
~ (19500.	1.055	1.136	u.98698J	36.40	50.05	6. 3325-05
SC	2 0 5 0 0 .	1.300	1.277	0.982479	38.82	53.33	6 7875 OS
19	21000.	1.375	1.349	0.977000	40.03	200	20 32 7 7
20	21500.	1.420	1.433	0.99545.0		* 0 • 1	CO-3/10 0
21	22000.	1.475	184	000000	26.15	50.96	6.1416-05
22	22500		107.1	25 to 5. to	22.24	58,06	5.77F-05
	CC 2001	0 + 6 + 1	1.240	1,00000	43.19	59.38	6.999E-05

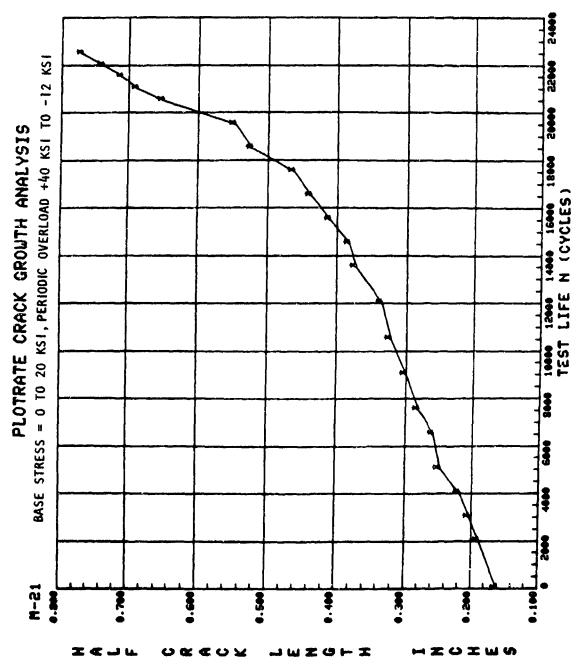


Figure 35. Crack growth curve for test M-21.

Land Day

TABLE 33. DATA TABULATION FOR TEST M-22

BASE STRESS = 0-20 KSI, SINGLE OVERLOAD = -6 TO +30 KSI SPECIMEN 40.: 4-22

ı		D MA X=				į	
				1EST FRE0= 6.	6.00 HZ.		
ENVIRONMENT	COMPITION:	AMRIENT AIR					
, 0A	CYCLES	A (MEA SLRED)	A (REGRESSICN)	MULT. CORR. COEFF	K - M A K	4	2
4 1	<u>.</u>	0.315	0.315	0.99874	4	200 71	1 10470
~	1830.	0.365	0,370	99886	15.20	60.41	2067
~	2500.	0.355	0.391	200000	12.41	. ,	I. 656E-05
4	3700.	0.440	91.7	17066	17.61	12.11	8046-
S	5350.	3.505		46166	00.01	ċ	1 54E -
-0	64.70	2000	010.0	0.997115	۰.	7.9	823E
	7360	0.00	0.576	0.997730	19.14	19.14	638E
· «	00.00		0.040	.99802	•		4.998F-05
: 0	* 0.00	C . C	0.710	0.999387	•	21.29	684E
,	.0500	0.73	٤	0.994534	•	2	4185
5 :	11130.	1.210		0.993944	28.29	28.29	3716
- :	116 40	1.255	•	0.994775	•	29.98	4.5
2:	121 40.	1.520	1.575	0.994865	•	32.20	2000
٠,	12230.	1.50	.55	0.996096	•	32.61	2 5 5 6 C
*	12330.	1.615	1.615	0.998723			
15	12430.	1.655	.66	0.504270	֓֞֜֞֜֜֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֡֓֡֓֓֓֡֓֡֓֡֓֡֓֡	22.30	. 354E
91	12500.	1.705	•	01766		33.40	•
17	12570.	1.725	7,0,0	100164-0	7.	34.26	•
8	12640.	1 745	•	022885*0	ø	34.62	•
16	12710		•	0.991075	35.03	95	. 506E
20	12010		7×2 * 1	0.996726	4.	Ŷ.	2.595E-04
2.5	13013		•	9845	36.15	36.15	087F-
3.3	13010	075-1	٠	0.998683	36.95	·o	5405-
33	13717	1.425	1.989	0.996900	37.88	37.88	714F-
	.01161	Z • 06 >	2.065	0.997104	38.82	Œ	0.455
3 (13210.	.16	-	0.997564	4		77.47
\$ 2	13310.	٠	2.239		Ö		1000
9.	13410.	2.340	2,335	149199.0	•	•	• 402E-
27	13510.	2.450	2.444	001800	•	;	
28	13610.	u	1	001000	10.01	47.04	6. / 7F-04
			•	, 00,400		,	

TABLE 33. DATA TABULATION FOR TEST M-22 (CONCL)

				DA /DN	1.1376-03	1.4846-03	1.9715-03
				DELTA K	48.03	51.70	51.25
		.00 HZ.		X-MAX	48.03	51.70	57.25
BASE STRESS = 0-20 KS!, SINGLE OVERLGAD = -6 TO +30 KS!	AR 0.0 IN.	TEST FKFQ= 6.00 HZ.		MULT. COKR. COEFF	0.998127	0.999233	0.999837
)-20 KSI, SINGLE OVE	NE 6.000 IN.			4 (MEASURED) A(REGRESSION)	2.765	3.013	3,349
BASE STRESS = (R= 0.250 IM.	P MA X=	ENVIPONMENT CONDITION: AMRIENT AIR	4 (MEA SLRFD)	2, 755	2.955	3.350
: 4-22			COMDITIONS	CYCLES	13710.	1361.).	13910.
SPECIMEN 40.: 4-22	CCT SPECIMEN	* 7 J v d	ENV I PONMENT	40.	62	30	31

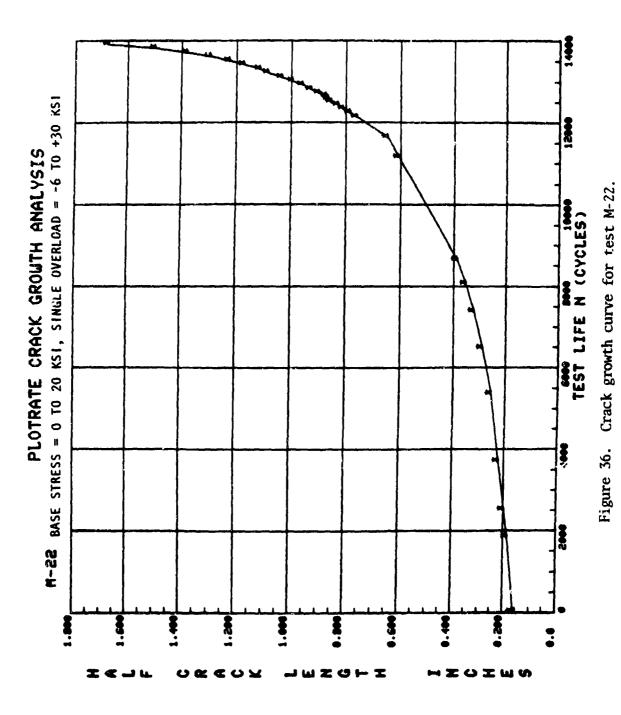


TABLE 34. DATA TABULATION FOR TEST M-23

BASE STRESS 0 TO +20 KSI, PERIODIC OVERLOAD = -6 TO +30 KSI SPECIMEN NO.: M-23

*7! Wd							
		P MA X=		TEST FFEG= 6.	.00 HZ.		
NY TROUMEN	ENVIRONMENT CANDISION:	AMBIENT AIR					
.0	CYCLES	A [MFA SLRFD]	A (RFGRESSICN)	MULT. CORR. COEFF	K-MAX	DEI TA K	NC/ AG
-	•	0.303	0.302	0.994	13.80	Þ	99.
~	1000.	0.330	0.337	12566	14.59	14.59	. 7435-0
(FF)	2000.	0.375	0.347	0.592651	15.23	15.23	724E-
4	3000.	0.405	0.404	0.993911	~	15.97	_
۰	4000	0.430	0.438	16166	16.64	•	9825-
9	5004.	0.465	0.478	0.994452	17.39	۲.	- 3060
~	.0009	0.515	0.523	0.995605	18.20	18.20	2. 3225 - 05
æ	. 600.	0.500	0.572	0.996403		6	599E-
0	8000.	0.620	0.622	0.997744	19.90	6	8
10	9000°	0.680	0.683	0.497982	20.88	ö	2
11	10000	0.750	0.7%7	6.998857	21.86	÷	858F-
12	10900.	0.820	0.820	0.998203	72.96	22.96	702E -
13	11700.	0.850	0.846	6866660	24.08	,	1
14	12400.		0.979	0.999477	25.20	25.20	3625-
15	13000.	1.065	1.061	0.997852	•	26.30	
16	13400.	•	1.118	0.994735	27.06	27.06	58
11	13800.	1.180	1.175	0.989396	27.80	27.80	967E-
9.	14200.	1.225	1.238	0.991485	28.61	29.61	1616
C	14600.	1.330	•	0.992011	79.90	29.90	4
	14900.	1.430	1.436	0.985602	31.10	31,10	1.485E-04
21	15200.	1.570	1.542	0.993914	32.41	6	S
22	15500.	1.640	1.636	0.990815	33.57	33.57	•
23	15800.	1.715	1.721	0.983036	34.50	34.60	Φ
	16100.	1.815	1.821	0.995603	35.82	5.8	4
25	16380.	1.950	٠.	0.993492	37.53	37.53	3.4946-04
92	16630.	2.140	3	0.993528	9.8	9.8	O
27	16800.	•	2,332	0.993928	42.18	42.18	6.877F-04
•						•	

TABLE 34. DATA TABULATION FOR TEST M-23 (CONCL)

BASE STRESS 0 TO +20 KSI, PERIODIC OVERLOAD = -6 TO +30 KSI SPFC IMEN 40.: 4-23

			DA /DN	1.262E-03	1.552E-03	1.998E-03	2.64 TE-03	3.424E-03	5.875F-03	9.810E-03	1.415E-02	2 · 2 75E - 02
			DELTA K	46.77	48.22	50.05	51.83	53.46	55.64	60.07	63.94	71.84
	.00 HZ.		K-MAX	46.77	46.22	50.02	51.83	53.46	55.64	20.09	63.94	71.84
AN 0.0 IN.	TEST FREO= 6.00 HZ.		MULT. CORR. COEFF	0.997957	0.996840	0.996394	0.995740	0.994022	0.940157	0.958807	0.975031	0.991930
W= 0.000 IN.			A (REGRESSI CN)	2.676	2,778	2.902	3.021	3,125	3,256	3,503	3.697	4.034
R= 0.250 IN.	P MA X =	AMBIENT ATR	A (MEA SLRED)	2.660	2.770	2.890	3.010	3,120	3.250	3.430	3.585	0,00
		CONDITION:	CYCLES	17010.	17050.	1 7090	17120.	17141.	17160.	17180.	1719).	17200.
CCT SPECIMEN	*71 hd	ENVIPONHENT CONDITION:	, O.		Ç		: 2	. ٢	3.6	· 60	2	37

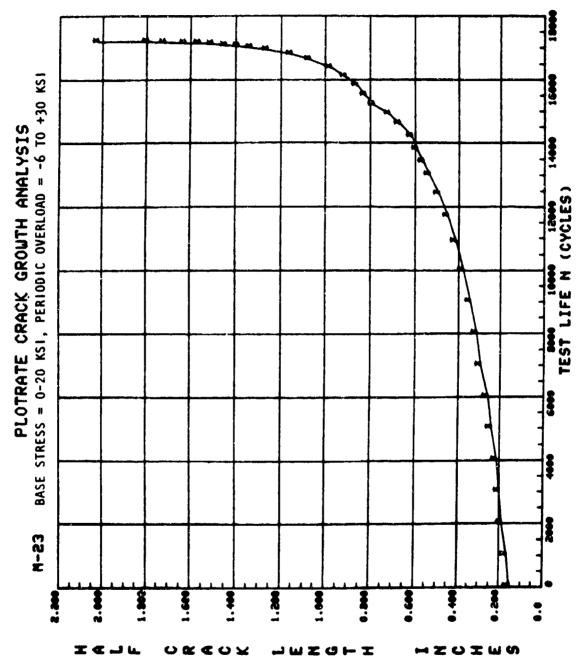


Figure 37. Crack growth curve for test M-23.

TABLE 35. DATA TABULATION FOR TEST M-24

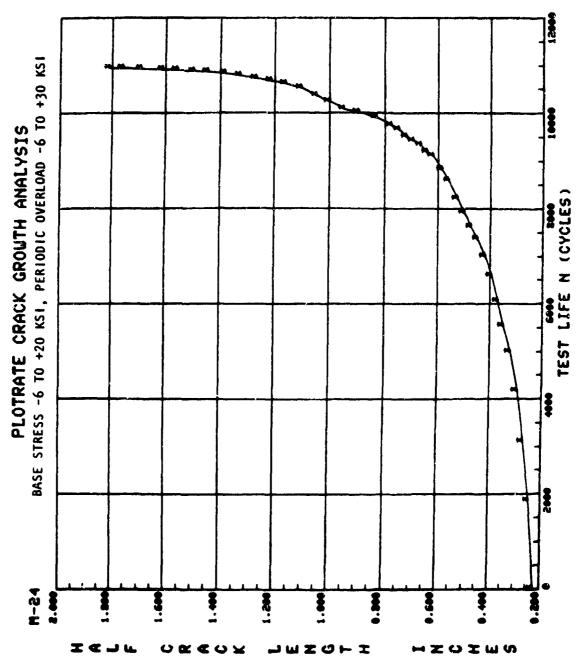
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-6 TO +30
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STRESS -6 TO +20 KSI
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***		-x vin d		TEST FREG* 6.	6.000HZ.		
ENV I RONMENT	* NOT A TONC'S I	AMBIENT AIR					
*0 *	CYCLES	A (MFA SLRED)	A (REGRESSION)	MULT. CORR. COEFF	X-M-X	DELTAK	M C 40
_	ċ	0.440	0. :40	N	11.12	16.65	70-31-Y
~	1850.		0. 480	0.999616	11.63	15.12	1.5956-05
m	3080.		0.526	0.997414	12.18		2.404F-05
*	4154.		0.586	0.997558	12.86	·	3.19%-05
r.	4983.		0.641	0.998523	13.47		3.8685-05
9	5522.		0.684	0.998871	13.93	18.11	4.386F-05
~	6043.	2	0.733	0.997965	14.44	18.77	5.0625-05
æ	6583.	2	.J. 789	0.994700	15.00	19.50	6.1305-05
σ	7000.	•	0.839	0.998448	15.49	20.14	7.2315-05
2	7354.	0.830	0.893	0.997528	16.00	20.81	7.9855-05
	7611.	1	0.939	0.997927	16.43	21.36	R. 424F-05
12	7906.	2	0.992	0.998625	16.92	22.00	9-0705-05
e .	8212.	z	1.047	0.998227	17.41	22.64	9.5586-05
	8590.	_	1.118	0.996625	18.04	23.46	1-1106-04
<u>.</u>	8823.		1.169	0.996311	18.49	24.04	1.3195-04
e !	9104.		1.251	0.993809	19.19	24.94	1.7636-04
	181.		1.276	0.996286	19.40	25.22	2.04%-04
* •	9325		1.335	0.991863	19.90	25.87	2.1726-04
<u>.</u>	• • • • • • • • • • • • • • • • • • • •	1.355	10 E • 1	0.995091	20.28	26.37	
31		•	1.420	0.996036	20.61	26.79	2.507E-04
- C	,100,		1.47B	0.990549	21.25	27.62	3.054E-04
27	9121.	1.545	1.531	0.993992	21.52	27.98	3-4186-04
57	9900	1.650	1.677	0.987748	22.71	29. 52	4.227-04
5 'C	10010.	•	1.788	0.989172	23.61	30.70	4-431F-04
	10082.	•	1.858	0.490166	24.18	31.44	4. 412F-04
6 . (10235.	1.955	1.999	0.991515	25.33	32,93	70-3567.5
12	10363.	2°025	2.092	0.990490	26.10	20.26	70-2707 7
× 7)		١	

TABLE 35. DATA TABULATION FOR TEST M-24 (CONCL)

BASE STRESS -6 TO +20 KSI, PERIODIC OVERLOAD -6 TO +30 KSI SPECIMEN 40.: 4-24

CCT SPECIMEN	EN A= 0.2	.250 IN.	W* 6.000 [A.	AN= 0.0 IN.	i		
=>1 40		P MA X =		TEST FREG# 6.00	.00 HZ.		
ENVIRONMENT CONDITION:	: NOT A I GNCO	AMBIENT AIR					
· CP	CACLES	A (MEA SLP FD)	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	04 /D
2	10609.	2.320	2.330	0.995920	28.11	36.54	7.296E
٥٢	10678.	2.425	2.431	0.999758	28.98	37.68	8. 967E
31	10733.	2.535	2.534	0.498225	29.89	38.85	1.094
32	10785.	2.650	2.651	0.997179	30,95	40.24	1.354E
33	10830.	2.760	2.778	0.995115	32.14	41.78	1.756E-
34	10862.	2.865	2.891	0.997622	33.24	43.21	2.218E
35	10886.	2.950	2.999	0.995688	34.32	44.62	2.908E-
36	10905.	3.110	3.111	0.991907	35.50	46.14	3. 81 TE-
3.7	10922.	3.215	3.242	0.493038	36.93	48.00	5.138E-
38	10936.	3.375	3.392	0.995767	38.68	50.26	6.807E-
30	10945.	3.515	3.520	0.999822	40.27	52,34	8.859E
40	10950.	3.615	3.615	0.999878	41.50	53.95	1.0136



ligure 38. Crack growth curve for test M-24.

TABLE 36. DATA TABULATION FOR TEST M-25

-6 TO +40 KSI
, PERIODIC OVERLOAD
BASE STRESS = -6 TO +20 KSI, I
H-25
SPECIMEN 40.:

AN = 0.0 IN.	TEST FREG= 6.00 42.
W= 6.00-1 IA.	
8= 0.250 IN.	P MA X
CCT SPECIMEN	PHIVE

ENVIRONMENT CONDITION: AMBIENT AIR

DA /ON	1.4065-05	1.6385-05	1.9586-05	1.9385-05	2.077E-05	1.9416-05	1.851F-05	1,7265-05	1.651E-05	1.754E-05	1.9685-05	2.26 TE-05	2,9645-05	3.5205-05	3,9355-05	6.1405-05	7.831F-05	8.722E-05	9, 126E - 05	9,341,6-05	6,652F-05	7.3526-05
DELTA K	17.91	18.98	20,33	21.57	22.82	23.99	25.22	26,11	26.99	27.67	28.42	29.53	30.98	32.00	32.98	34.41	35.68	58.38	40.40	42.43	45,39	46.60
X 4 Y - X	13.78	14.60	15.64	16.59	17.56	18.45	19.40	20.08	20.75	21.29	21.86	22.71	23.83	24.61	25.37	26.47	27.44	29.52	31.07	32.64	34.92	35.85
MULT, COPR, COEFF	0.965102	0.983122	0.985153	0.988950	0.991583	0.990642	0.991796	0.987733	0.986969	0.784932	0.997959	0.492463	0.990136	0.991912	0.992907	0.965007	0.981769	0.968793	0.970206	13.975803	0.985782	0.992774
A (REGRESSICN)	0.301	0.338	0,347	0.435	·). 4×7	1.511	0.592	0.633	0.676	902.0	0.747	0.804	0.8#1	9.6.6	106.0	1.073	1-147	1.309	1.433	1.500	1.747	1.823
A I MFA SLRED)	0.303	0.32	0.400	0.428	0.455	0.530	0.585	0.654	0.675	0.700	0.755	0.755	0.865	0.950	0.965	1.050	1.155	1.235	1.475	1.600	1.700	1.825
CYCLES	÷	1250.	2502.	3750.	5002.	6251).	7505.	8755.	10006.	11260.	12510.	13760.	15320.	16260.	1 7000.	18120.	18760.	19600.	20200.	20800.	21700.	22400.
ć	_	~	•	4	Ç	9	^	æ	σ	20	=======================================	12	13	14	15	91	17	&	<u>\$</u>	90	21	22

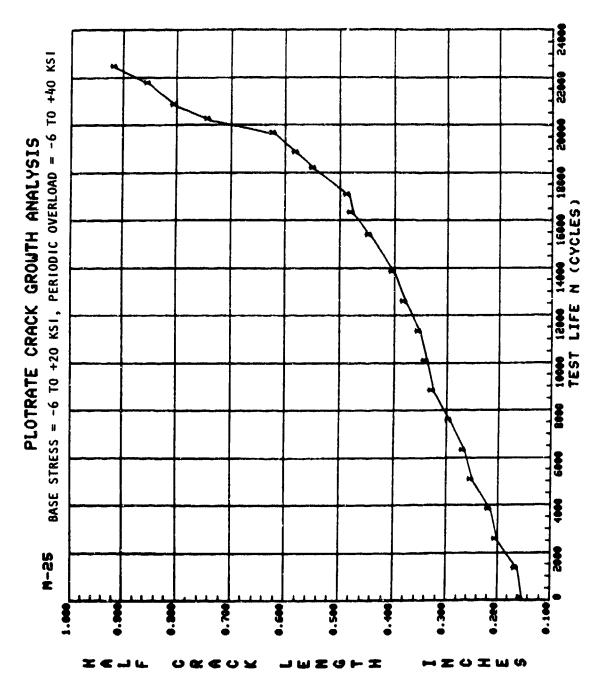


Figure 39. Crack growth curve for test M-25.

TABLE 37. DATA TABULATION FOR TEST M-26

BASE STRESS = -2.4 TO 8 KSI, SINGLE OVERLOAD = +8 TO -16 KSI

SPECIMEN NO.: 4-26

CCT SPECIMEN		R= 0.250 IN.	W= 6.000 IN.	AA 0.0 IN.	
* 7.1 to d		PHAX		TEST FREO* 6.JU HZ.	.Ju HZ.
ENVIRONMENT CONDITION:	CONDITION:	AMBIENT ATR			
40.	CYCLES	A (MEA SLRED)	A (REGRESSICN)	MINT, CORR. COFFE	X 4 8 4
	•	0.303	0.302	1866660	5.52
7	20015.	0.327	0.378	0.999955	5.76
m	53000.	0.385	0.383	0.999266	6-22
*	80000	0.445	777.0	0.997847	6.70
ۍ	100001	0.455	0.502	0.997924	7.13
9	115000.	0.550	0.553	0.999156	7.49
	12 7000.	0.605	0.601	0.998483	7.82
æ	137000.	0.650	9.648	0.999007	8
•	145000.	0.685	0.686	0.998886	8.37
2	155000.	0.130	0.732	0.993547	8.66
=	161000.	0.170	0.766	1395967	8.86
12	169000.	0.810	0.820	0.996510	9.18
13	177000.	0.855	0.886	0.995131	9.56
*	181000.	0.920	0.971	0.994578	9.16
15	185000.	0.960	0.959	0.996428	0.0

	CYCLES	A (MEA SLRED)	A (REGRESSICN)	MULT. CORR. COFFE	K-WAX	OF! TA K	70/ 40
	•	0.303	0.302	0.99987	7 2	2	
	20015.	0.327	328	550000 17	7.75	07 4	70-276-6
	53000.	0.385	0.383	992666	6.23	9 5	1 0156-04
	80000	0.445	4440	0.497847	6.70	2 2	1 3535-06
	1000001	0.455	0.502	0.99792	7 . 1 3	90 0	1 44 95 - 04
	115000.	0.550	0.553	75.000.0	64	02.0	1 00.75
	12 7000.	0.605	0.601	0.99883	7.82	7. 01	1.3446-06
	137000.	0.650	3.648	7006660	20.00	10,56	2 3136-06
	145000.	0.685	0.686	0.99886	2.8	10.88	2.424F-06
	155000.	0.130	0.732	0.993547	8.66	11.25	2,9135-06
	161000.	0.170	0.766	0.995967	8.86	11.52	3.2065-06
	169000.	0.810	0.820	0.996510	9.18	11.94	3.77.15-06
	177000.	0.855	0.886	0.995131	9.56	12,43	4.191E-06
	181000.	0.920	0.971	0.994578	9.76	12.68	4.335F-06
	185000.	0.960	0.959	0.996428	16.6	12.96	4.501F-06
	182000	0.990	0.992	0.998905	10.15	13.20	4.651E-06
	193000.	1.030	1.030	0.498283	19.36	13,47	5.2695-06
	197000.	1.075	1.072	1166660	10.58	13.76	5. 7065-06
	200513.	1.110	1.115	0.999429	10.91	14.05	6.251E-06
	204513.	1.170	1.170	0.998202	11.10	14.43	6.5465-06
	208500	1.225	1.223	0.998302	11.37	14.78	4.9548-06
	212500.	1.285	1.279	0.997324	11.66	15,15	7. 4£ BE - 06
	218500.	1.360	1.369	0.498386	12.11	15.74	9.291E-06
	222500).	1.435	1.435	0.998854	12.44	16.17	9.3585-06
:	225300.	1.495	1.488	0.999416	12.70	16.51	1,016F-05
	229750.	1.580	1.586	0.999507	13,18	17.14	1.1755-05
	233750.	1.685	1.682	1,999597	13.65	17,75	1.3375-05
	237460.	1.785	1.785	0.999817	14.15	18.40	1.513F-05

TABLE 37. DATA TABULATION FOR TEST M-26 (CONT)

- X. W.	SPFC IMEN B=	0.250 IN.	W= 6.000 IN.	AA= 0.0 IN.			
,		P MA X=		TEST FREG= 6.	6.00 HZ.		
ENVIRONMENT	NT CONDITIONS	. AMBIENT AIR					
.0	CACLES	A I MEA SURED!	A (REGRESSION)	MULT. CORR. COEFF	X A M	DEL TA K	Z () V (
20	240860.	1.890	1.894	0.99982			1.6926-05
2	243560.		1.947	0.999909	15.14	69.61	•
3	246060.	2.065	2.083	0.999629	15.62	20.30	2.040E-05
35	248660.	_	2.195	0.999663	16.18	21.03	25.PF
13	250870.	2.255	•	0.999483	16.69		50KF
34	252770.	2.400	2.345	0.494535	17.20	~	728E-
W1	254770.	2.500	2.509	0.399519	17.80		
36	256170.	•	2.593	0.499416	18.26	3	156E
37	257880.	2, 705	2.703	0.998782	18.36	•	515E
	259380.	2.805	2.812	0.998754	19.48	25.33	8404
30	260630.	2.905	2.908	1).999436	20.05	26.06	2135
Ç.	761680	3.010	3.009	0.994017	20.65	26.85	4.1025-05
1	262740.	3.055	3.107	0.973869	21.27	27.65	4.5625-05
25	263790.	3.210	3.203	0.951206	21.90	28.47	5.177E-05
6	265790.	3.325	3.439	0.044438	23.55	30.61	7.852E-05
*	265490.	3.420	3.382	0.948956	23.13	30.07	7.9338-05
4.5	266120.	3.525	3.483	U.95297U	23.87	31.04	9.259E-05
9!	266710.	3.625	3.610	0.954452	24.86	32.32	
~	26 72 50.	3. 730	3.734	0.999164	25.90	33.67	1.123E-04
1 0	267710.	2	3.879	0.999563	26.83	34.87	1.256F-04
64	268160.	3.955	3.941	0.999564	27.99	36.39	1.5295-04
, 50	268460.	•	4.054	0.998808	28.9+	37.62	. 78JE
15	268760.	4.160	4.164	0.195359	30.14	34.19	2.081F-04
25	26 9000	4.260	4.246	0.399232	31.36	411,77	2.4355-04
53	269200	4.370	4.366	0.998854	32.65	45.44	88 75
54	269360.	4.455	194.4	0.998675	33.97	44.16	36:56
5.5	269520.	4.565	4.574	0.496400	35.72	64 77	2000
4							1

TABLE 37. DATA TABULATION FOR TEST M-26 (CONCL)

SPECIMEN 4D.: M-26	.: 4-26	BASE STRESS * .	-2.4 TO 8 KSI, SINGL	BASE STRESS = -2.4 TO 8 KSI, SINGLE OVERLOAD = +8 TO -16 KSI	-		
CCT SPECIMEN	H GC	A.250 IN.	W= 6.000 IN.	AA= 1).1) [N.			
* k J wd		P MA X =		TEST FREO= 6.00 HZ.	00 HZ.		
ENVIRONMENT CONDITIONS	CONDITIONS	: AMBIENT ALR					
40. 58. 59.	CYCLES 269713. 269790. 269840.	4 MEA SURFD) 4.745 4.860 4.970	A(RFGRESSICN) 4.764 4.873 4.970	*ULT. CORR. COEFF 0.995246 0.996680 0.999672	K-MAX 39.12 41.44 43.78	DELTA K 50.86 53.87 56.91	DA 6.81 8.78

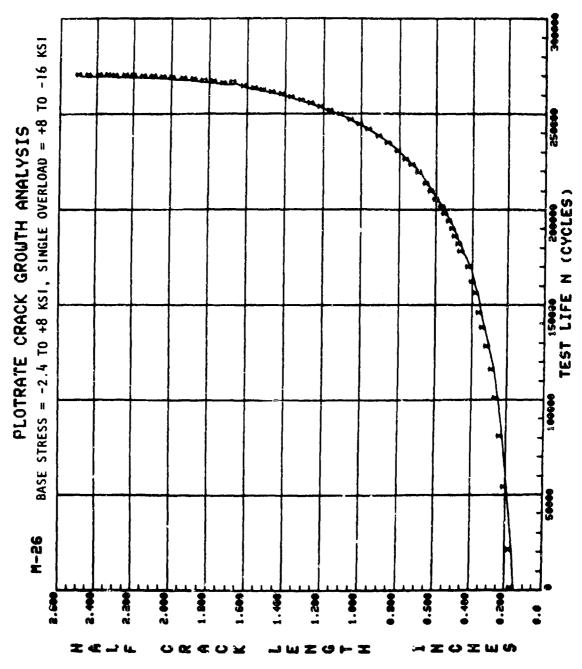


Figure 40. Crack growth curve for test M-26.

TABLE 38. DATA TABULATION FOR TEST M-27

BASE STRESS = -2,4 TO +8 KSI, PERIODIC OVERLOAD = +8 TO -16 KSI SPECIMEN NO.: 4-27

E.VIBONMENT VO. 1 2 3 3 4	T CONDITION:			TEST FREOR 6	6.00 HZ.		
		AMBIENT AIR					
N M 4 K	CYCLES	A (MEA SLPED!	A (REGRESSICN)	MULT. CORR. COEFF	K-44X	DF1 YA K	07 40
W W 4 K		0.355	0.355	0.99998	5.99	7.78	3045.4
ጠቀለ	31000.	0.465	0.403		6.38	6.29	1.1816
4 N	51000.	0.460	0.461	0.999713		80.60	1.715
ď	660m.	0.515	0.518	0.999660	7.25	9.42	2.087
•	78000.	0.575	0.571	0.997127	7.62	9.90	2,5656
£	40000	0.635	0.635	0.496554	8.04	10.46	3-174
~	.00566	0.685	0.697	0.997559	9 - 4 4	10.97	3.669
ec ·	107200.	0.760	0.756	0.996281		11.44	3.9626
σ ;	115400.	0.835	0.827	0.997086	9.22	11.99	4.3806
2 :	122500.	0.855	0.894	0.998066	9.61	12.49	4. 704E
	127900.	0.935	0.941	0.996717	9.87	12.83	5.1416
C; ;	1350m.	1.015	1.014	0.998118	10.27	13,35	5.965
£]	140000		1.077	0.997198	19.01	13.79	6.396
5 1	144500.	1.145	1.138	0.990796	10.93	14.21	7.685
<u>ب</u>	148400	1.155	1.192	1690ö6*U	11.21	14.57	8.571E
<u>e</u> !	1520%).	1.240	1.264	0.991054	11.58	15.05	9.8746
	154271.	1.325	1.307	0.392177	11.80	15.34	1.056
5	157256.	1.375	1.373	0.993467	12,13	15.77	1.24%
2 ;	160015	1.44.	1.452	0.993193	12.52	16.28	
	16791	1.52.)	1.529	0.495793	12.90	16.77	1.4196
17	1000001	1.64%	1.676	0.997543	13.38	17.39	1.5556
22	159200	1,720	1.726	O. 9963U9	13.86	18.02	
5 .	172000.	1.820	•	0.996458	14.33	18.63	1.37%
	175000	1.925	1.030	0.999404	14.86	19.32	2.15%
¥. '	177586.	2,055	2.050	0.499449	15.45	20.09	2.5116
92	180000	2.17.1	۲,	0.999654	16.08	20.91	2.84BE
7.	182:000	~·	2.293	01.496616	15.68	21.68	3.436
ar C	147007	2.430	2.431	0.997824	17.39	22.61	4.245E

TABLE 38. DATA TABULATION FOR TEST M-27 (CONCL)

		TEST FREO* 6.00 HZ.	
<u>?</u>	ž.	FRE0=	
	ANE 0.0 IN.	TEST	
31 (160 OF UL F.)	W= 6.000 IN.		
STELLING TOTAL 4-21 BASE SIMESS = "Z.4 IS TO AST, PERIODIC OFFICIAL TO TO TO TO	R= 0.250 IN.	a X Vin d	PACE REPORT CONTINUES AND LESS A SERVICES AND LESS A SERVICES AND LESS AS A SERVICES AND LE
7	Œ		AUT TO
	CCT SPECIMEN	# 2*	TRONGENT CO.
Li L	L 33	* 1 P.	3

DA /ON	4. 580E-05	5. 538E-05	6.966E-05	9. 170E - 05	1.198-0	1.526E-04	2.0236-04
DELTA K	23.22	24.60	26.39	28.93	30.71	33.09	37.28
K-MAX	17.86	18.92	80,30	22.26	23.62	25.46	28.68
MULT. CURR. COEFF	0.998671	0.998825	0.6969.0	0.989541	0.993349	0.998936	0.999662
A (REGRESSION)	2.520	2.714	2.951	3.257	3.449	3.682	4.029
A (MEA SURED)	2.500	2.120	2.975	3.220	3.415	3.654	4.030
CYCLES	185029.	14 7008.	189000.	191000.	192026.	193002.	194016.
, ,	56	30	31	32	33	34	35

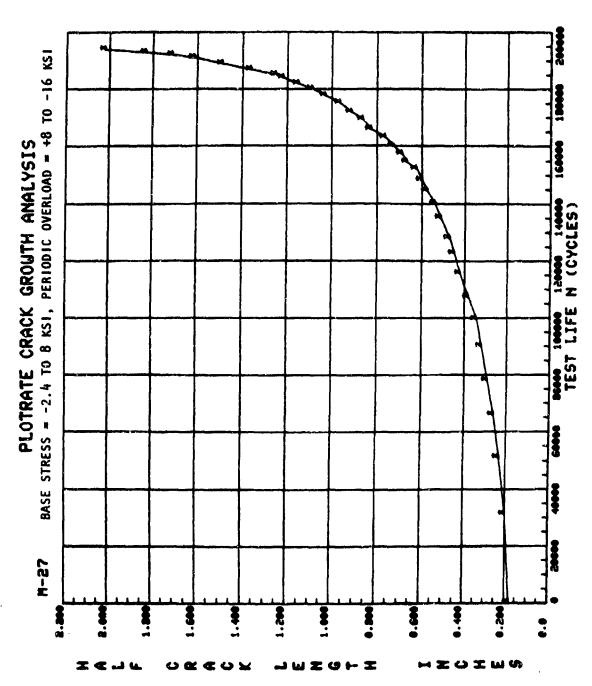


Figure 41. Crack growth curve for test M-27.

TABLE 39. DATA TABULATION FOR TEST M-28

BASE STRESS -6 TO +20 KSI, PERIODIC OVERLOAD +30 TO -15 KSI SPECIMEN 40.: 4-28

	н2.
	TEST FRE0= 6.00 HZ.
	T FRE
4N= 0.0 IN.	TES
b= 6.000 IA.	
9= 0.250 IN.	PRAKE
CCT SPECIMEN	
ב	*7.1 hd

ENVIRONMENT CONDITION: AMBIENT AIR

ç,	CYCLES	A (MEA SLRFD)	A (PEGRESSICN)	MULT. CHRR. COEFF	X-M-X	DELTA K	* E * C
-	÷	0.465	0.465	0.999841	11.66	20.01	1.1965-05
٨.	1367	0.500	0.495	0.994142	11.81	20.66	1.542F-05
er.	23/10.	0.530	0.533	0.992550	12.26	21.46	1.89BF-05
4	2701).	0.545	0.549	0,993813	12.45	21.78	2.050F-05
ď	320.).	0.580	0.570	0.992744	12.69	22.20	2.2865-05
ç	*1009	0.665	0.610	0.487842	13.13	22.99	2.8245-05
_	4500.	0.635	0.639	0.966965	13.45	23.54	4. 2366 - 05
Œ	4850.	0.660	9.008	0.988630	13.76	24.08	5-6156-05
c	5005	0.680	0.645	0.986667	13.94	24.40	5.8765-05
2	5250.	0.130	0.719	0.966849	14.29	25.01	6.3265-05
11	5500.	0.755	0.757	0.996515	14.68	25.69	6.467E-05
12	5750.	0.785	0.787	0.994514	14.97	26.21	5.9098-05
13	60003.	0.815	0.812	0.998639	15.22	26.64	5.3576-05
14	. 05 29	0.835	0.835	0.984021	15.45	27.03	6.1436-05
15	6500 .	0.86	0.864	0.991806	15.73	27.52	7.000E-05
36	6750.	0 .8 5n	0.898	0.995678	16.05	28.08	8. 7865-05
11	7000.	0.955	0,952	0.984647	16.55	28.96	9.821E-05
E	1250.	1.000	1.009	0.986134	17.07	29.08	1.0395-04
61	750.).	1.065	1.067	0.992887	17.60	30.60	1.041E-04
50	1750.	1.130	1.116	0.987862	18.03	31.55	1.0056-04
21	86.A).	1.160	1.165	0.978795	16.46	32.30	1.0708-0
22	P 200.	1.155	1.202	0.997300	18.77	32.85	1.3726-04
33	8,00.	1.230	1.232	0.995331	19.03	33.30	1.3546-04
54	8400	1.265	1.261	0.995359	19.28	33.73	1.51%-0
\$2	¥€00°	1.300	1.294	0.996807	19.55	34.22	1.692E-04
92	8740.	1.370	1.377	0.998119	20.25	35.44	1.9026-04
7.7	5800	1.400	1.396	0.997678	20.41	35.71	2.068E-04
82	8960.	1.470	1.467	0.998823	20.99	36.73	2.4756-04

TABLE 39. DATA TABULATION FOR TEST M-28 (CONCL)

BASE STRESS -6 TO +20 KSI, PERIODIC OVERLOAD +30 TO -15 KSI

AA= 0.0 IN.	1667 6060 4
N= 6.000 IN. AN=	
8= 0.250 IN.	W M
CCT SPECIMEN	= 7 No

•		MARY ICE
ENVIRONMENT CONDITION: AMBIENT AIR	AMRIENT AIR	

NG/ VO	2.878-04	3 3 3 5 5 C	2000	40-37C4-6	70 - 31 10 · Y	10-24C7-C	20 200 C	10 - 271 7 · I	\$ 2000 o	1 1 6.65 - 03	1.2636-03
DELTA K	37.68	38.02	70,75	41.50	42.03	44.46	10 57	47 47	000	50.71	52.17
K-MAX	21.53	22.24	22.08	23.77	26.53	25.41	26. 28	27.24	20.42	28.99	29.81
MULT. CURR. COEFF	0.999090	6.999693	0.999516	CE0666-0	0.999848	0.999457	0.0990.0	770560	0.999453	C 80000 0	986666*0
A (REGRESSICN)	1.533	1.620	1.710	1.807	1.901	2,008	2.113	2.228	2,323	2.430	2.525
A (MEA SLEEP)	1.525	1.625	1.710	1.805	1.900	2.005	2.115	2.220	2.320	2.430	2.525
CACLES	90,88	9230,	9357.	9472.	9573.	9670.	9753.	9829.	9883.	9935.	9974.
. 0×	5 2	33	31	35	13	34	35	36	3.7	86	19

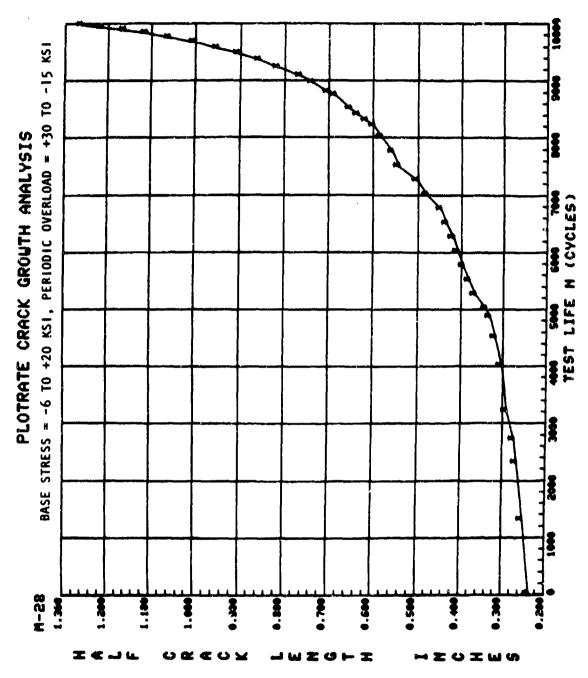


Figure 42. Crack growth curve for test M-28.

DATA TABULATION FOR TEST M-29 TABLE 40.

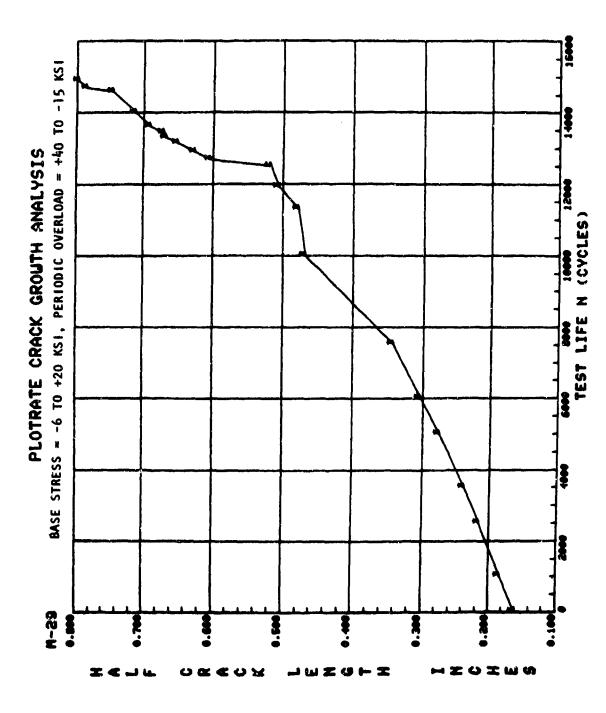
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The second secon

				DELTA K	18.47	19.68	21.41	22.58	24.12	25.61	27.68	31,12	32.95	34.11	35.23	35,82	36.88	38.49	38.67	39.06	39.33	40.16	41.87	42.16	43.01
5 KS1		6.00 HZ.		K-MAX	14.21	15.14	16.47	17.37	18.55	19.70	21.30	23.94	25.35	26.24	27.10	27.55	28.37	29.61	29.75	30.04	3.1.25	30.49	32.21	32.43	33.09
BASE STRESS = -6 TO +20 KSI, PERIODIC OVERLOAD = +40 TO -15 KSI	AN= 13.3 IN.	TEST FREU= 6.		MULT. CORR. CUEFF	0.499960	0.999861	0.499H26	0.499870	0.995226	0.984448	0.484965	0.084234	0.432555	U. A81468	0.924874	0.932257	0.498432	0.949495	0.993056	0.993450	0.958643	0.968140	0.967826	0.965492	0.943554
6 TO +20 KSI, PERIO	WE 6.000 IN.			AIRFGRESSION	0.120	0.363	0.429	0.477	0.543	0.610	0.710		0.990	1.056	1.121	1.155	1.219	1.316	1.327	1.351	1,367	1.419	1.525	1.543	1.597
BASE STRESS = -	8= 0.250 fk.	P MA X #	: AMRIENT AIR	A (MEA SLRED)	0.320	0.365	0.430	0.475	0.550	0.605	0.665	0.935	0.955	1.010	1.035	1.205	1.250	1.300	1.335	1.340	1.380	1.425	1.450	1.576	1.555
62-1			CONDITION:	CYCLES	e	1000.	2501.	3500.	5003.	.0009	7510.	100001	11300.	11900.	12500.	12683.	12900.	13150.	13300.	13450.	13600.	1 4000.	14600.	14700.	14900.
SPECIAFN NO.:	CCT SPECIMEN	=h}wd	ENVIRONMENT C	.05		~	~	•	ب	•	~	80	6	<u> </u>	~	12	13	*	51	92	11	9	61	50	21

NOV VO

2.219-05
2.172-05
2.304-05
2.400-05
2.977-05
3.236-05
5.956-05
1.1376-04
1.2786-05
1.2786-05
1.2786-05
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1.2786-05
1.2786-05
1.2786-05



Children of the second of the second second

Figure 43. Crack growth curve for test M-29.

TABLE 41. DATA TABULATION FOR TEST M-30

PMAX PMAX PMAX PMAX PMAX PMAX PMAX PMAX	SPECIMEN NO.: 4-30	. 4-30	BASE STRESS =	BASE STRESS = -6 TO +20 KSI, PERIODIC OVERLOAD = -15 TO +40 KSI	OVERLOAD *	-15 TO +40 KSI
= X Wh d	SPECIME!		0.250 IN.	N= 0000 PM	AN= 0.0	
	*7114		P MA X =		TEST	FREQ= 6.00 HZ.

	0.290 0.336 0.387 0.524 0.581 0.611 0.723 0.824	0.999967 0.995936 0.996536 0.996694 0.995140 0.995118 0.995917 0.995863 0.995863	13.52 14.55 15.64 16.53 17.57 19.22 19.81 20.68	7.5 8.9 0.3 1.4	1.800E-05 2.287E-05 2.152E-05
	0.336 0.387 0.432 0.524 0.581 0.671 0.723 0.723	0.995936 0.996536 0.996694 0.995140 0.995018 0.995017 0.995863 0.9954582	14.55 15.64 16.53 17.57 18.24 19.22 19.81 20.68	18.91 20.33 21.49	2.287E-
	0.387 0.432 0.524 0.524 0.581 0.671 0.723 0.723	0.996536 0.996694 0.995140 0.995907 0.995863 0.994282 0.994282	15.64 16.53 17.57 18.24 19.22 19.81 20.68	20.33	2-192E-
	0.432 0.524 0.524 0.581 0.617 0.723 0.723 0.824	0.996694 0.995140 0.9959018 0.994171 0.995863 0.995459	16.53 17.57 18.24 19.22 19.81 20.68	21.49	17/ 10/
	0.487 0.524 0.581 0.617 0.723 0.749 0.824	0.995140 0.995018 0.995017 0.995863 0.995863 0.995459	17.57 18.24 19.22 19.81 20.68		2 1 CG- 05
	0.524 0.581 0.617 0.723 0.723 0.749	0.995018 0.995907 0.995863 0.995863 0.995459	18.24 19.22 19.81 20.68 21.50	22. B4	2.0715-05
	0.581 0.617 0.723 0.749 0.824	0.995907 0.994171 0.995863 0.994282 0.995459	19.22 19.81 20.68 21.50	7.7	1 4625-05
0000000	0.617 0.723 0.723 0.749 0.824	0.994171 0.995863 0.994282 0.995459	19.81 20.68 21.50	24.99	1 9815-05
	0.671 0.723 0.749 0.824 0.863	0.995863 0.994282 0.995459	20.68	25.76	7.1146-05
00000	0.723 0.749 0.824 0.863	0.994282	21.50	26.89	7. 1 CAC - OS
	0.749 0.824 0.863	0.995459		27.95	2.451F-05
0000	Դ. 824 Ո. 86 3	9768660	21.90	6	2.729F-05
0000	0.863	\$	23.01	29.92	3.0475-05
		0.993194	23.58	30.66	3. 310F=05
	0.910	0.985774	24.24	31.51	3 900F-05
0	1.000	0.983990	25.49	33.14	5.1946-05
	1.053	0.985294	26.20	34.06	5.478F - 05
1.1	1.086	0.979459	26.64	34.64	5-302F-05
1.2	1.131	0.940565	27.23	35.40	6.971F-05
•	1.211	0.967860	28.27	36.75	9.313F-05
1.280	1.350	0.974819	30.04	39.05	1,1556-04
	1.468	0.972754	31.50	40.95	1.298F-04
	1.621	0.981440	33.38	43.40	1.460F-04
	1.794	0.987316	35.50	46.15	1.5245-04
	1.926	0.990662	37.1!	48.24	1 . A 5 QF - 04
	2.00.2	0.998014	38 . 10	40.57	20 - 30 - 50 - 50 - 50 - 50 - 50 - 50 - 5
19409. 2.085	2.081	0.999839	39.42	511. 73	2 5000-04
). 2.2	2,248	0.999792	71717	63.46	100000
19914. 2.355	2.395	000010	77.77		3° 7076 - 0

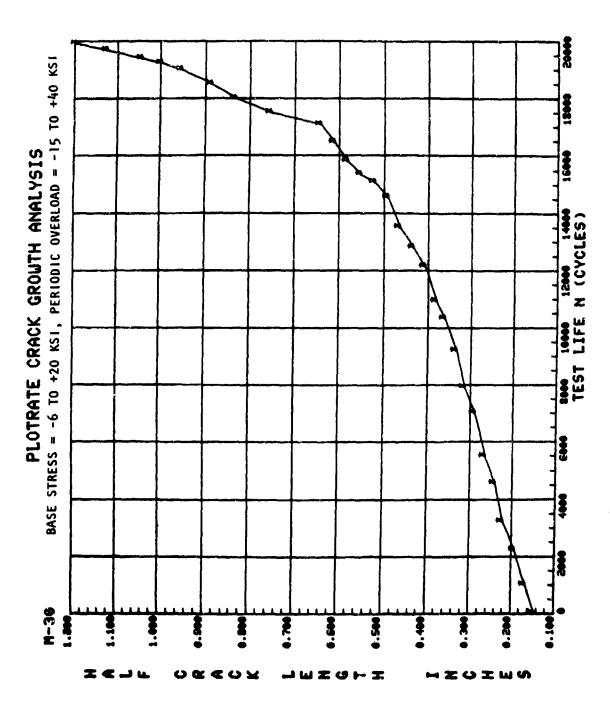


Figure 44. Crack growth curve for test M-30.

TABLE 42. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP III - MULTIPLE OVERLOAD/UNDERLOAD

		STI	P I	ST	EP II	NI	N	
Test No.	Loading Profile	Max Ksi	Min Ksi	Max Ksi	Min Ksi	Cycle	N _{II} Cycle	Comments
M-31	$\frac{1}{N_{I}}\sqrt{\Lambda\Lambda\Lambda}$	8	0	20	0	10,000	To failure	Underload effect, low stress level
M-32	0 	20	0	40	0	5,000	To failure	Underload effect, high stress level
M-33		8	2.4	20	2.4	10,000	To failure	Underload effect, low stress level
M-34	0 6 7 7	20	6	40	12	5,000	To f ai lure	Underload effect, high stress level
M-35	NI WII	8	0	20	14	10,000	To failure	Underload effect, two-level stress ratios, low stress
M-36	° KVVVV	20	0	40	28	5,000	To failure	Underload effect, high stress level
M-37		8	-2.4	20	0	10,000	To failure	Comp/tension load effect, low stress level
M-38	0 N.M.	20	-6	40	0	5,000	To failure	Underload effect, high stress level
M- 39		0	-6	20	0	5,000	To failure	Comp - comp-load effect, low stress level
Y-40	~ \ \\\\\\	0	-12	40	0	5,000	To failur e	Comp-comp load effect, high stress level

TABLE 42. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP III
MULTIPLE OVERLOAD/UNDERLOAD (CONT)

		STI	EP I	STI	P II	N _I	NII	
Test No.	Loading Profile	Max Ksi	M in Ksi	Max Ksi	Min Ksi	Cycle	Cycle	Comments
M-41	NI WAY	-3	-6	20	10	500	To failure	Comp-comp load effect
M-42	°\ \ \ \ \ \	-3	-12	20	10	5,000	To failure	Comp-comp load effect
M-43	\sqrt{N}	30	0	20	0	500	To failure	Multiple load retardation, R = 0
M-44	° N N N N N N	40	0	20	0	500	To failure	Multiple load retardation, R = 0
M-45	NI NII	30	9	20	6	3,370	To _ailure	Multiple load retardation, R = 0.3
M-46	° (ATA ATA)	40	12	20	6	500	To failure	Multiple load retardation, R = 0.3
M-47	\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	20	6	20	14	500	To failure	Stress ratio effect
M-48	O AAA NII	40	12	40	28	500	To failure	Stress ratio effect
M-49	N _I N _{II}	20	14	20	6	500	To failure	Stress ratio effect
M-50	° N AAA/	40	28	40	12	500	To failure	Stress ratio effect
M-51	N, MII	8	0	20	0	2,500	500	Repeat steps 1 & 2
M-52		20	0	40	0	500	50	Repeat steps 1 & 2
M-53	IN IN IN	8	2.4	20	2.4	2,500	500	Repeat steps 1 & 2
1-54	VAXAAAAAAAA	20	6	40	6	500	50	Repeat steps 1 & 2

TABLE 42. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP III - MULTIPLE OVERLOAD/UNDERLOAD (CONCL)

		STE	P I	ST	EP II	N _I	NII	
Test No.	Loading Profile	Max Ksi	Min Ksi	Max Ksi	Min Ksi	''I Cycle	Cycle	Comments
M-55	NII	8	0	20	0	2,500	50	Repeat steps 1 & 2
	I_N I_N			0	-6		50	
VI-56	° WAY WAY	20	0	40	0	2,500	50	Repeat steps 1 & 2
	N			0	-12		50	
M-57		20	0	υ	-12	2,500	50	Repeat steps 1 & 2
	O KANAN		Ū	40	0	0,000	50	
M- 58	NI WI	20	-6	40	-6	2,500	500	Repeat steps 1 & 2
M- 59	0 N.I.I.	8	-2.4	30	-2.4	5,000	2,500	Repeat steps 1 & 2
м-60		8	-2.4	8	-16	2,500	2,500	Repeat steps 1 & 2

TABLE 43. DATA TABULATION FOR TEST M-31

Special No.: 4-31

	1	0.620 IN.	M= 6.000 IN.	ANE DOD IN.			
= ブi wa		P MA X=		TEST FREQ= 6.00	.00 HZ.		
ENV IR JYM SNT	COMOITION:	AMBIENT AIR					
O	CYCLFS	A (MEA SLRED)	AIREGRESSION	MULT. CURR. COEFF	K-MAX	DELTA K	NQ/ YO
_	ċ	0.295	0.295	0.864219	13.63	13.63	1.5596-05
~	100001	0.255	3.320	0.882522	14.20	14.20	1-251E-05
~	11000.	0.380	0.347	0.919649	14.80	14.80	1.417E-05
.*	12000.	0.360	0.378	0.941843	15.44	15.44	1.6296-05
S	13007.	0.405	0.417	0.955811	16.23	16.23	1.867E-05
æ	13306.	0.445	0.441	0.995861	16.70	16.70	1.916E-05
_	1 4900.	0.450	0.488	0.999590	17.59	17.59	
c c	15900.	0.540	1,541	0.999673	18.53	18.53	
σ	16900.	0.600	0.599	0.998843	19.52	19.52	
2	1 7800.	0.660	0.662	0.997928	20.54	20.54	4.061E-05
,	18570.	0.720	1.727	0.99864	21.56	21.56	4.868E-05
12	19010.	0.170	0.770	0.998777	22.21	22,21	5.289E-95
£	19410.	0.820	0.815	0.998480	22.88	22.88	5,6096-05
7 .	19810.	0.865	1).864	0.999568	23.59	23.59	5.990E-05
15	20210.	0.910	0.911	0.999055	24.25	24.25	6.317E-05
14	20610.	0.960	0.958	0.997264	24.92	24.92	7.137E-05
~ 1	21010.	1.015	1.017	J.998598	25.71	25.71	8.284E-05
œ (21410.	1.080	1.086	0.498213	26.64	26.64	1.018E-04
61	21710.	1.155	1.149	0.998808	27.47	27.47	1.182E-04
02	22020.	1.220	1.228	0.998519	28.49	28.49	1.3706-04
21	22220.	1.290	1.286	0.998581	29.22	29.22	1.46%-04
22	22400.	1.340	1.339	0.997234	29.89	29.89	1.660E-04
8	22580.	1.400	1.402	0.997082	30.68	30.68	1.867E-04
57	22680.	1.430	1,436	0.998496	31.14	31.14	1.9266-04
25	22780.	1.485	1.477	0.998252	31.61	31.61	2.0976-04
92	2 2 9 80.	1.570	1.569	0.998360	32.74	32.74	2.382E-04
	F (1.650	1.671	0.998600	33.99	33.99	2.5916-04
57 N1	23330.	1.769	1.747	0.997778	34.92	34.92	2.8565-04

TABLE 43. DATA TABULATION FOR TEST M-31 (COMCL)

SPECIMEN VO.: 4-31

1				EDITOR E		10 - 3+ 10 · 0	5.066-04	5. 022E-04	10-3276 7	10 14 10 10 10 10 10 10 10 10 10 10 10 10 10	10.00 P	8. U02E-U4	\$0 - 37 F - 6	1.127E-03	1.251E-03	1-4735-03	1.7416-03	2.1216-03	FO - 21111 - C	4 OCOC -02	CO - 10 CO - 4	50-2197°C	6.871E-03	CO 3076 0
i			061 TA	25.00	37.21	38.21	39.66	40.04	42.21	17077	17.61	74.0	16°**	45.83	47.13	48.66	50,09	51,81	20.5	54.24	24 17	10.1	28.23	77 17
	6.40 HZ.		X H X	35.99	37.21	38.21	39.60	86.04	42.21	73 21	17.64	500	1000	42.83	47.13	48.66	50.03	51.81	53.09	56.26	24.17		26.25	47.19
AN - 0.0 IN.	TEST FREG= 6		MULT, CORR. COFFF		0.996942	0.499634	n.999653	0.998224	0.998322	0.498715	710205-0	7075000	EC 3 400 11	19. 4607.31	Ú.986106	0.487203	0.985824	060086*0	0.974199	0.994402	0.995714	5 C C C C	01217.6.0	0.999817
W= 6.000 ! A.			ALREGRESSION	1.875	1.915	2.016	2.128	2.237	2.334	2.411	2-473	DES - C	2 403	0000	7. 791	2.809	2.907	3.020	3,101	3.174	3.238	1 631	- (· (· (· (· (· (· (· (· (· (3.575
R= 0.250 IN.	P 4A X =	AMBIER I ALR	A (MEA SURFO)	1.835	1.520	2.020	2.134	2.235	2.339	2.46.1	2.480	2.550	2.605	700	2.017	2.800	2.950	5.965	3.084)	3.180	3.270	3,405		5.575
		ENGLTIONES	CYCIES	23480.	23630.	23740.	2 3860.	23960).	2404.).	24055.	24135.	24175.	24215.	2426		.4547	24325.	24355.	24375.	24300.	24403.	24415.	36 / 76	.67447
CCT SPECIMEN	=7.1%d	ENVIRONMENT CONDITION:	*U*	56	33		32	~	56	3.5	36	3.7	34	0		<u> </u>	- :	. *	4.3	77	. 45	46		•

74.**46.4**

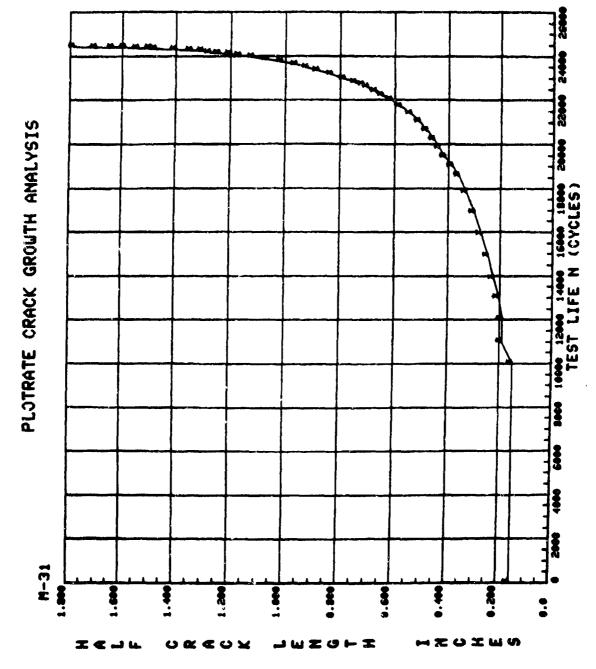


Figure 45. Crack growth curve for test M-31.

TABLE 44. DATA TABULATION FOR TEST M-32

SPECIMEN NO.: 4-32

******		P MA X=		TEST FREG= 6.00 HZ	. 2H DO.		
EN7 I RONNENT	ENJIRONMENT CONDITION:	AMBIENT AIR					
4 0.	CYCLES	A (MEA SUPED)	ACREGRESSION	MIIIT. CODD COREE	2	2	į
: :	• •	0.310	0.310		27.95	27 95	UA/UN
~	1836.	0.355	0.365	0.97775	לני טנ	76.96	DO 2007 1
•	2100.	0.360	0.375	700385.0	20.05	30.05	
•	2600)	0.445	707.0			D D.	1.0747-03
	300	2170	C. C. C	152/86-0	31.59	31.59	1.910F-05
` `		014.0	114.0	0.886374	32.24	32.24	2.374E-05
• •	614	0.460	195.0	0.788436	34.40	34.40	4. 05 OF - OS
- (2000	0.455	0.611	0.751912	39.41	39.41	1.2116~04
œ	5075.	0.550	0.656	1766690	16.04	10-119	1 826F-04
o ·	5100.	0.685	0.677	0.584620	75.17	75 17	1000
<u>.</u>	5125.	0.730	0.725	0.92849	20 67	30.67	101011
=	\$150.	0.780	795	71 30 37		() · () ·	1. 3215 -U
~ -	K136	; u		+197660	47.18	45.18	1.525E-03
2 F	21.12	0.875	978.0	0.999105	47.23	47.23	1.7345-03
s ;	.0026	0.960	0.952	0.990406	49.67	49.67	2.360F-03
* 1	5225.	1.070	1.070	0.959214	52.47	52 07	2 0/00
	5245.	1.180	1.224	0 07 14 7 2	00 79		
7	3763			01717	20.00	20.00	2.670E-03
2 !	.070	1.357	184.1	0.490553	63.33	63,33	8.9015-03
	2275	204	- Ase	, , , , , , ,			

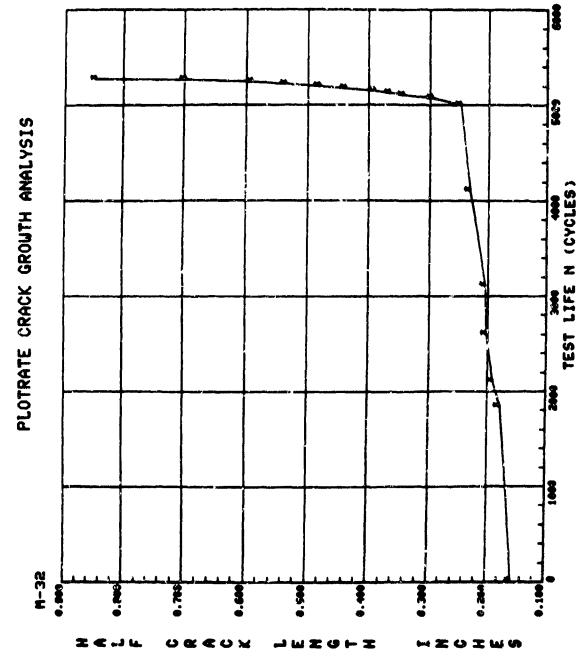


Figure 46. Crack growth curve for test M-32.

FABIL 15. DATA TABILATEN FOR HIST M 33

SPECIMEN 40.: 4-33

CCT SPECIMEN	ec c	1,250 IN.	W= 6.000 1A.	AA= (3.) 34.			
= 7.1 tr q		± X ¥₩ d		TEST FREG= 6.00 M	. 3H ('E.		
ENV I RONNEN I	ENVIRONMENT CONDITION:	AMPIENT AIR					
.0,	CACLES		ATREGRESSION	MULT, CABE, CHEFF	X O M - A	() Fr TA K	40,40
 - (•	\sim	0.295	9666660	13.63		() A () () () () () () () () () () () () ()
~ •	10000	-	9.34.8	0.994451	13.93	17.26	90-1:03:0
-	110(2)		0.371	0.995578	14.45	1. 7.1	1 227 00
. • •	12000.	0.350	11.358	0.497516	15.02	13.22	1.4516-05
r 4	1 3500.	014.0	0.405	0.996970	16.00	14,08	1.7015-05
0 F	1 20.00	0.460	0.72.0	0.996128	17.06	15.02	2.0775-05
~ (16500.	0.530	0.527	0.995913	18.29	16.09	7 48 74 65
E (1 7500.	0.565	3.576	13.94,7479	19.12	16.83	2.9226-05
~ ;	18500	0.640	0.637	0.497944	20.14	11.72	1 4 B1E - 05
2:	19200		0.686	0.998798	20.92		2 401C - C3
(1 99 (K)	0.745	0.746	1295666	21.45	10.01	50 3067 7
71:	20600.	0.810	0.864	9.4997.39	22.78	20.04	40 - 30C + 44 4 - 42 - 45
S .	21300.	0.860	0.891	0.998384	23,33	70.67	50-3078
• •	21900.	0.950	0.953	9896650	24.85	21.87	6-6715-05
<u>.</u>	22400.	1.020	1.022	689666*0	25.79	22.69	7.6156-06
<u>.</u>	22800.	1.050	1.086	0.999419	26.04	23.44	8-224F-05
_ ;	23100.	1.135	1.137	11,998416	77.31	24.03	9.1075-05
E G	23400.	1.155	1.192	0.498392	28.03	24.66	50 - 32 56 - 6
	21000	1.245	1.251	0.999315	28.79	25.33	1.1075-04
	24300	1.325	1.321	194556*0	89.66	20.12	1.256-04
2.6	34400	000	1.400	119666.0	30.66	26.98	1.4116-04
22	24000			0.959348	31.77	27.95	1.6225-04
	.00047	046.1	•	1).999836	32.99	24.03	1.8775-06
25	25500	1.700	1.700	0.997454	34.35	30.23	2-19(F-04
, ,	25000	0.40.1	I.840	0.997656	36.06	31.33	2.51 46 - 114
9 7	2.00m	٠,	2.001	0.997915	38.02	33.46	2.962F - 04
	7,200.	Ξ'	•	0.997085	39.53	34.79	3.427F-04
67	202(N).	2.245	2.262	0.997036	41.29	36.34	3.9416-04
							•

TABLE 45. DATA TABULATION FOR TEST M-33 (CONCL.)

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		•	DAZON	4. 68 X - 94	7.64 TE-04	9.3466-04	1.14%-03	1.9586-03
			DEL TA K	31.16	40.31	42.11	44.38	52.80
	.00 HZ.		_	•	-	•	8.43	_
ž	TEST FREG= 6.00 HZ.		COEFF	11	51	15	89	0.999342
AN= 0.0 IN.	TEST		CORR.	9966.0	0.9843	0.9906	0.9958	0.9993
AN			HULT.					
W= 6.000 IM.			1 (REGRESSION)	2.475	2.606	2,753	2.930	3.449
8ª 0.250 IN.	P MA X=	ENVIRONMENT CONDITION: AMBIENT AIR	A (MEA SUP FO!	2.415	2.620	2,135	2.875	3.500
		COMDITIONS						27300.
CCT SOFCIMEN	=>!>d	ENV IRONMENT	, OV	560	3.0	31	32	33

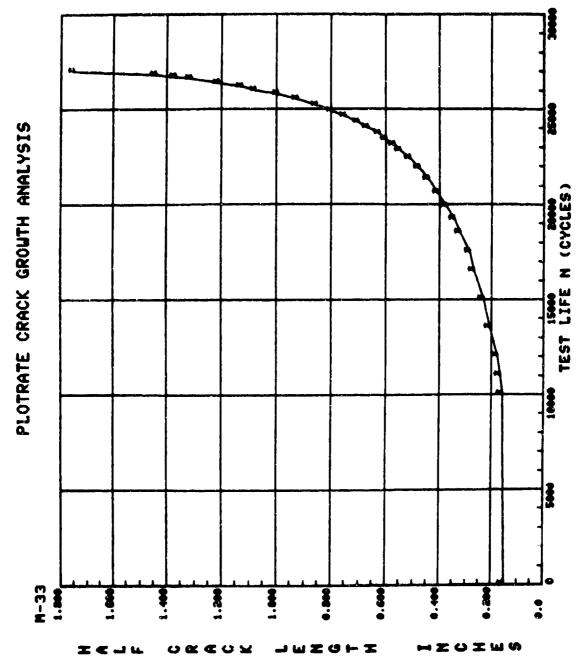


Figure 47. Crack growth curve for test M-33.

TABLE 46. DATA TABULATION FOR TEST M-34

PETIMEN NO.: 4-74

4. 6.000 1K.

8= 0.250 IN.

CCT SPECIMEN

7.74		= X 47 d		1FST FREO 6.00	.00 HZ.		
V I RONNENT	ENVIRONMENT CONDITION:	AMBIENT AIR					
. 0×	C ACI E S	A (MEA SUREN)	A (REGRESSICN)	MULT. CURR. COEFF	K-MAX	DEL TA K	DA /DM
	•		0.300	0	27.50	19.25	7. 3906 - 06
•	2725.	0.345	0.348	0.998714	29.62	20.13	A. 7506-06
•	3304.	0.360	0.358	0.996602	30.05	21.04	8.852E-06
.*	4225.	0.375	0.377	0.489729	30.86	21.60	1.2046-05
S.	5725.	0.400	0.429	0.732691	32.92	23.04	2.66%-05
9	5925.	0.405	157.0	0.667594	33,11	23.64	4.8546-05
-	5951.	0.455	0.460	0.820723	34.12	23.89	1.06GE-Q
œ	5976.	0.485	13.464	0.785204	34.27	23.99	2.06 E-04
c	.1009	554.0	0.483	0.384522	34.99	24.49	3.1566-04
10	6041.	0.500	0.498	0.958593	35,51	24.86	1.6046-0
11	6101.	0.510	0.511	0.996851	36.05	25.20	1.2606-04
12	6201.	0.545	0.542	0.998402	37.09	25.96	1. 761E-04
13	6301.	0.560	0.583	0.999198	38.49	26.94	2.4036-04
71	. 10 > 9	0.640	0.635	0.097:17	40.22	28.16	3.187E-0
15	6501.	0.700	0.703	0.997299	42.37	29.66	4.1896-0
16	. lu99	0.785	0.706	0.994668	45.19	31.63	5. 82GE-G
11	66 58.	0.860	0.462	0.497843	47.12	32.59	7.400E-9
18	6708.	0.930	0.940	0.997494	49.33	34.53	9.6336-0
19	6735.	0.955	0.900	0.998426	50.70	35.49	1.1216-03
50	6769.		1.065	0.998833	52.72	36.90	1.3516-03
21	6806.	1.175	1.173	0.989939	55.58	38.90	1.8666-0
22	6835.	1.275	1.288	0.987149	58.50	40.95	2.6956-0
23	6.856.	1.330	1.426	0.930705	61.95	43.37	4. 782E-0
54	6866.	•	1.508	0.947289	63.99	44.79	~
25	6879.	0	1.715	4.960018	90.69	48.34	1.161F-02
36	7007	1 046	. 01.3	£67770 C			**

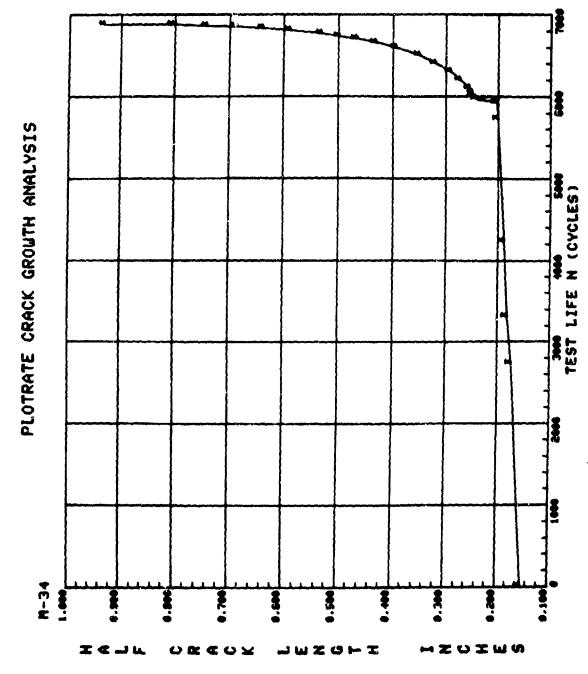


Figure 48. Crack growth curve for test M-34.

TABLE 47. DATA TABULATION FOR TEST M-35

SPECIMEN 40.: 4-35
CCT SPECIMEN 8= 0.250 IN. W= 6.000 IN. PMIN=

ENVIRONMENT CONDITION: AMBIENT AIR

TEST FREO= 6.00 HZ.

Ahr ibail

TABLE 47. DATA TABULATION FOR TEST M-35 (CONCL)

1.478E-05 1.545E-05 1.655E-05 1.865E-05 2.994£-05 3.458£-05 3.933£-05 5.318F-05 5.883E-05 1.053£-04 1.588F-04 1.827c-04 2.33(K-05 2.075F-05 2.656F-C5 4.358F-05 4.631E-05 4.903F-05 6.880F-05 9.204E-05 2.0436-04 0ELTA K 9.57 15.39 15.94 9.83 10.45 10.80 11.20 11.63 11.98 12.37 12.73 13.18 3.79 17.41 17.95 18.58 10.13 4.12 14.51 6.47 96.9 32.78 33.76 38.76 34.84 44.93 56.50 K-MAX 31.89 37.34 39.92 41.24 47.06 48.38 53.13 58.05 TEST FREO* 6.00 HZ. 36.01 45.45 45.98 46.19 43.94 ***8.6*** 51.29 16.49 MULT. CORR. COEFF ż 0.999155 0.999194 0.999232 0.999725 9.999679 0.999152 0.999174 0.997850 0.999313 0.998373 0.999931 0.999749 0.499535 0.999493 0.999530 106666.0 0.996854 0.998911 0.998821 0.995341 AA= 0.0 A (REGRESSICN) M= 6.000 IN. 2.467 1.572 1.945 2.153 2.258 2.618 2.850 3.104 3.213 3.304 165.5 3.599 1.500 2.541 2.790 2.606 2.986 ENVIRONMENT CONDITION: AMBIENT AIR 4 (MFA SLRE D) 1.500 1.575
1.650
1.740 2.550 2.550 2.650 2.655 2.750 2.950 2.055 2.055 2.055 2.255 2.350 3.055 3.300 3.480 3.465 3.200 R= 0.250 IN. P MA X= CYCLES : 50500. 53000. 168831. 172344. 55500. 58000. 60500 63000. 165392. 67131. 70148. 7154. 173144. 173944. 174844. 77041. 76352. 177548. 17906. 75669 78673 SPECIMEN NO.: SPECIMEN 40 29 39 *NI Wd

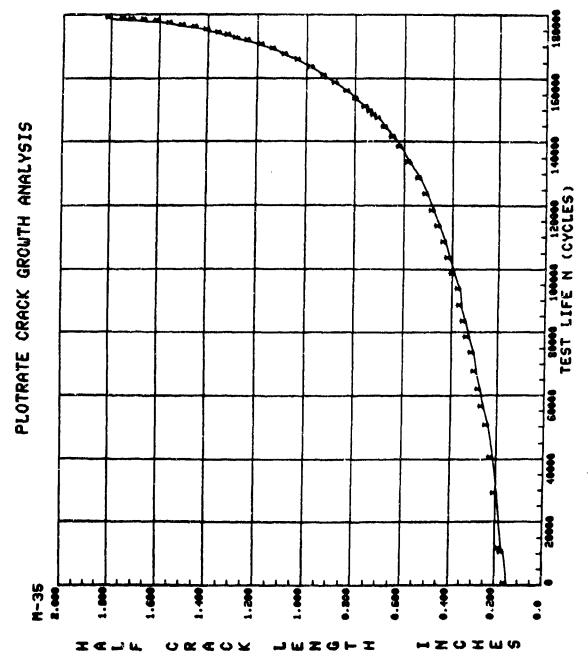


Figure 49. Crack growth curve for test M-35.

TABLE 48. DATA TABULATION FOR TEST M-36

DE-H .: UN NJNI Ja

		P MA X=		TEST FREG* 6.00	.00 HZ		
NA TOTAL CAT	Charles and the Control of the Contr						
NULE: IA		AMBIEN AIR					
, C.N.	CYCLES	A (WEA SLRFN)	A (RFGRESSI CN)	FULT. CORR. COEFF	K-MAX	DEL TA K	MO/ VO
	•	0.300	0.300	an.	27.50	8.25	5.884E-06
~	20003	0.350	0.355	0.998338	16.62	8.97	1. 781E-05
٠٠٠.	3000.	0.395	0.35	0.998520	31.59	9.48	2.1355-05
.•	3950.	0.445	6.4.0	0.998397	33.31	6.6	2.541F-05
S	5000.	0.455	0.407	0.996380	35.48	10.64	3-1105-05
₹.	, 190,	0.540	0.546	0.994088	37.21	11.16	3.940E-05
r -	640D*	0.550	0.593	0.996185	38.82	11.65	5.0486-05
σc	6965.	0.645	159-0	0.993874	40.72	12.22	6.414F-05
c	7416.	0.710	0.712	0.998992	42.65	12.60	8,1116-05
<u>ن</u>	7754.	0.170	13.769	0.998325	44.39	13,32	1.0035-04
	800¥.	0.815	0.821	0.997306	45.94	13.78	1.2135-04
12	8263.	0.860	0.885	0.997981	47.78	14.34	1.5336-04
£ ;	8411.	0.930	0.930	198666	50.64	14.71	1. 7806-06
*	8560.	0.985	0.986	998666	50.61	15.18	2.031E-04
٠,	8668.	1.135	1.033	0.999733	51.86	15.56	2-1755-1%
91	8793.	1.050	1.069	0.998937	53,37	16.01	2.4256-04
1.1	8902.	1.145	1.141	0.995269	54.72	16.42	2.8095-04
9C (9027.	1.205	1.211	0.988986	56.54	16.96	3.70%
<u>.</u>	9133.	1.280	1.291	0.993073	58.58	17.57	5.1436-04
97	9210.	1.360	1.376	0.970368	60.72	18.22	8.227E-04
7.1	9253.	1.440	1.441	0.976003	62.35	18.70	1.0766-03
22	9316.	1.535	1.543	0.917900	60.99	19,83	1.6165-03
23	7760	-	204				

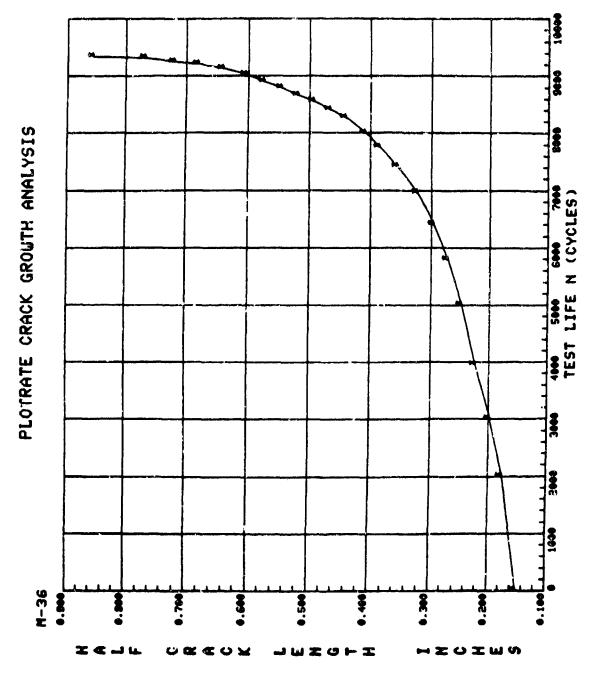


Figure 50. Crack growth curve for test M-36.

TABLE 49. DATA TABULATION FOR TEST M-37

COED INEN ACT 4-37

! !			DA 70M	1.0395-05	1.122F-05	1.7846-05	2245	68 TE	3.1296-05	3. 3.88E-05	4.044F-05	4.376-05	5, 1696-05	5.608F-05	6.327F-05	7. 5425-05	8.645E-05	8.7786-05	9.657E-05	1.082E-04	1.1976-04	1.3916-04	1.623E-04	1.77%-6	1.9056-04	2.090E-04	ŀ	2. 512E - 06	٠	3.0226-04	3.5285-04
•			DELTA K	.0	14.12	15.61	16.64	17.62	18.51	19.11	20,31	20.90	21.96	22.68	23.49	24.44	25,29	25.66	26.40	27.19	28.02	28.96	30.08	30.73	31.40	32.11	32.92	33.75	34.13	35.72	36.87
	6.00 HZ.		K-MAX	14.10	14.12	15.61	16.64	17.62	18.51	19.11	20.31	20.90	21.96	22.68	23.49	24.44	25.29	25.66	26.40	27.19	28.02	28.96	30.08	30.73	31.40	32.11	32.92	33.75	34.73	35.72	36.87
AN = 0.0 IN.	TEST FREU* 6.		WULT. CORR. CUEFF	0.998182	0.998124	0.995982	0.991933	0.997081	0.995959	0.996048	0.994550	0.996079	0.997603	0.998220	0.997566	0.996030	0.997892	0.996956	0.996929	0.996695	0.498609	0.999729	0.999809	0.999686	0.999785	U.999587	0.999340	0.998362	0.997420	0.996384	0.995857
W= 6.000 IA.			A (REGHESSICN)	0.316	916	0.386	0.438	064*0	0.540	0.575	·).64B	13.684	0.753	0.802	0.857	0.924	11.985	1.013	1.068	1.127	1.102	1.265	1.354	1.406	1.459	1.517	1.543	1.651	1.731	1.813	1.907
0.250 IN.	P MA K=	AMRIELT AIR	A (MEA SLRED)	0.316	0.320	0.380	0.430	0.485	0.540	0.585	0.635	0.650	0.750	0.805	0.855	0.925	0.975	1.015	1.075	1.130	1.185	1.265	1.355	1.405	1.460	1.515	1.565	1.650	1.735	1.805	1.920
ď		CONDITION:	CYCLES	.	1000)	12466.	13740.	14044.	15810,	16342.	17350.	17828.	18576.	19000.	19500	200M).	20401.	20550.	20850.	21150.	21450.	21750.	22050	10222	22350.	22500.	22650.	22800.	22950.	23100.	23250.
CCT SPECIMEN	#NIWa	ENV IRONMENT	40°	ا وسي	2	m	•	<u>.</u>	© (ec ·	•	51		7.5	13	4	. 5	91	11	e :	<u>ه</u>	₹ ?	7 ;	2: 2	57	* .	~ ;	96	۲,	ŗ

TABLE 49. DATA TABULATION FOR TEST M-37 (CONCL)

SPECIMEN NO.: 4-37

CCT SPECIMEN		8= 0.250 IN.	W* 6.000 IK.	DA C.O. 17.			
*NI Ka		P MA X a		TEST FREG= 6.00 42.	. 24 00.		
ENVIRONMENT CONDITION:	CONDITION	: AMPLENT AIR					
92	CYCLES	A (MEA SURED)	A (REGRESSICN)	MULT. CORR. COEFF	K-MAX	DELTA K	DA /DN
62	23350	1.960	1.976	0.997075	37.72	37.72	3.97!E-04
36	23450.	2.060	2.060	0.997436	38.76	38.76	4.442F - 04
31	23550.	2,155	2,152	0.497831	99.90	34.90	4.848F-04
35	23650.	2.260	2.257	0.999034	41.23	41.23	5.545E-04
33	23750.	2.370	2,364	0.996721	45.60	45.60	6.351E-04
46	23850.	2.485	157.2	0.996929	44.26	44.26	7.819E-04
35	23950.	2.640	2.650	186566*0	40.42	46.42	1.05203
36	24025.	2.810	2.802	11.983416	48.56	44.56	1.547F-03
37	24100.	3.000	3.050	0.988708	52.27	52.27	2.179E-03
38	24150.	3.220	3.269	0.394030	55.85	55.85	2.9115-03
39	24200.	3.605	3,603	971650-0	62.03	62.03	4.203F-03

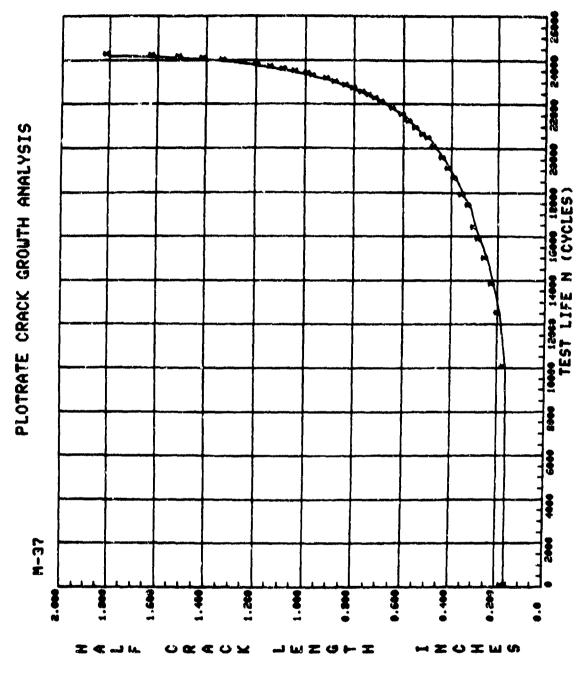


Figure 51. Crack growth curve for test M-37.

TABLE SO. DATA TABULATION FOR TEST M-38

4-38

SPECIMEN NO. :

27.49 28.90 30.95 45.68 5.1.54 32.53 37.43 40.79 43.05 50.27 41.19 49.17 51.18 53.81 K-M4X 27.49 26.90 34.52 37.43 40.19 43.05 45.68 49.17 50.54 56.27 61.42 TEST FRE0= 6.10 HZ. 44.82 53.81 61'17 51.18 WULT. CORR, COEFF 0.998856 0.994709 4.957358 0.453855 0.759967 0.994355 0.994154 1997097 0.732514 0.793851 0.961730 0.970730 0.979280 0.386151 0.947111 177116.0 0.927521 Ah = 0.4 4(REGRESSION) 0.300 h= 6.00G IN. 0.419 0.552 0.775 0.379 0.R12 0.934 0.984 1.007 0.331 0.665 AMRIEKT AIR A (MEA SLRED) 0.380 0.425 0.470 0.520 0.540 0.540 0.540 0.415 0.415 0.916 1.050 1.020 0.250 IN. P MA X= CONDITIONS £ 3901. 4702. 5005. 2501. 5105. 5135. 5150. CYCLES 1501. 5075. 5156. 5030. 5170. SP EC IMEN ENVIRONNENT * Z | W | CCT

3.28tF-07 1.751F-05 2.534F-05

2.935E-05 3.861E-05 6.735E-05

1.333E-04 3.364E-04

1.35eE - 03 1.55E - 03 1.55E - 03 1.76E - 03 1.69E - 03

3.704E-03 5.374E-03

1. 331E - 02

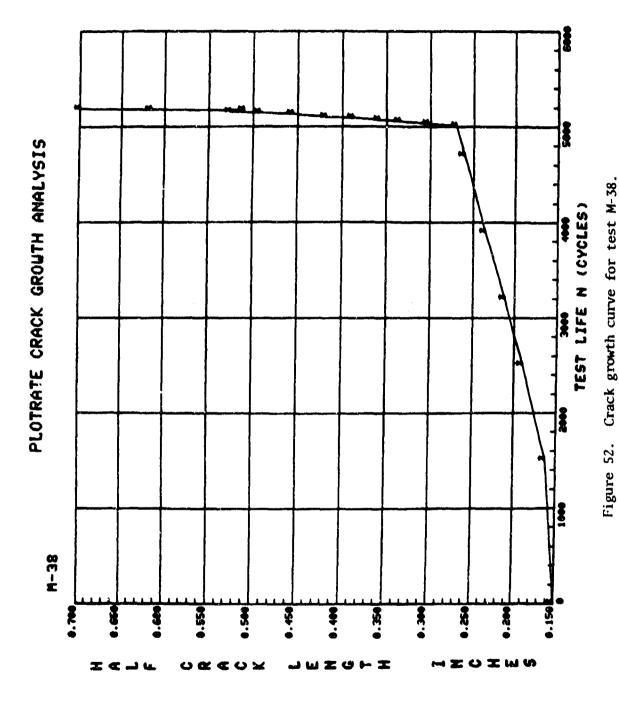


TABLE 51. DATA TABULATION FOR TEST M-39

DE-N . TON NEW U.S.

		•	OA AO	3980 €	9.34%	1.443	1.942	2.21 TE	2.5936	3.01%	3.62%	4.14BE	4.47%	4.923€	5.5356	6.424€	7.584E	7. 99RE	8. 905E	9° 999E	1.176	1.24R	1.267E	1.400€	1.392	1. 50×	1.76E	1.976	2.08%	2,29€	2.580E
			DELTA K	13.75	13.78	14.61	15.68	16.56	17.43	18.40	19.41	20.32	21.00	21.74	22.47	23.30	54.09	24,85	25.56	26.18	27.17	27.79	28.15	28.82	29.40	29.98	30.54	31.25	31.78	32.58	33.77
	6.UN HZ.		K-MAX	13.75	13.76	14.61	15.68	16.56	17.43	18.40	19.61	20.32	21.00	21.74	22.47	23.30	24.09	24.85	25.56	26.18	27.17	27.79	28.15	28.82	29.40	29.98	30.54	31.25	31.78	32.58	33.77
AN= 0.0 IN.	TEST FREG# 6		MULT. CORR. COEFF	0.998979	0.999581	0.999234	0.999340	0.999831	0.998622	0.998448	0.998867	0.999275	0.999175	0.999474	0.998021	0.998070	0.999053	0.996364	0.996364	0.991734	0.992387	0.991242	0.990036	750966.0	0.996673	0.999259	0.997961	0.998245	0.997885	0.998369	0.998577
W= 6,000 IN.			ALREGRESSION)	0.300	108.0	0,338	0.389	0.434	0.490	0.534	0.546	0.648	169.0	0.739	0.787	0.844	U. R99	0.954	1.005	1.051	1.126	1.173	•	1.254	1.299	1,345	1.390	1.447	1.490	1.556	1.653
.250 IN.	PMAX	AMBIENT AIP	A (MEA SURED!	0.300	0.360	0.340	0.350	0.435	0.460	0.535	0.550	0.650	0.650	0.740	0.750	0.840	0.895	0.955	1.005	1.060	1.110	1.170	1.215	1,255	1.295	1.345	1.355	1.440	1.485	1.565	1.655
McV Rz 0.2		ENVIRONMENT CONDITION:	CYCLES	.	5949.	65M).	ROOD.	• (JUUG	10001	11000.	12000.	12688.	13148.	136.88.	14188.	14688.	15111.	15451.	15750.	16000.	16367.	16567.	16680.	16855.	1 7030.	17205.	17355.	17505.	1 7605.	17755.	17555.
CCT SPECIMEN	=7] Wd	ENV TROUMEN	•0×	_	2	.	J	S	•	_	6 0	o	าด		12	13	* 1	15	91	11	91	61	20	21	22	23	54	25	9,	7.7	8

TABLE SI. DATA TABULATION FOR THIST M-39 (CONCL)

TEST FREO= 6.00 HZ. AA= 9.0 W# 6.000 1N. ENVIRONMENT CONDITION: AMBIENT AIR 9= 0.250 IN. P MA X= SPECINEN NO.: M-39 CCT SPECIMEN ***

#EASLPED! A(REGRESSICN) 1.750 1.750 1.850 1.940 1.940
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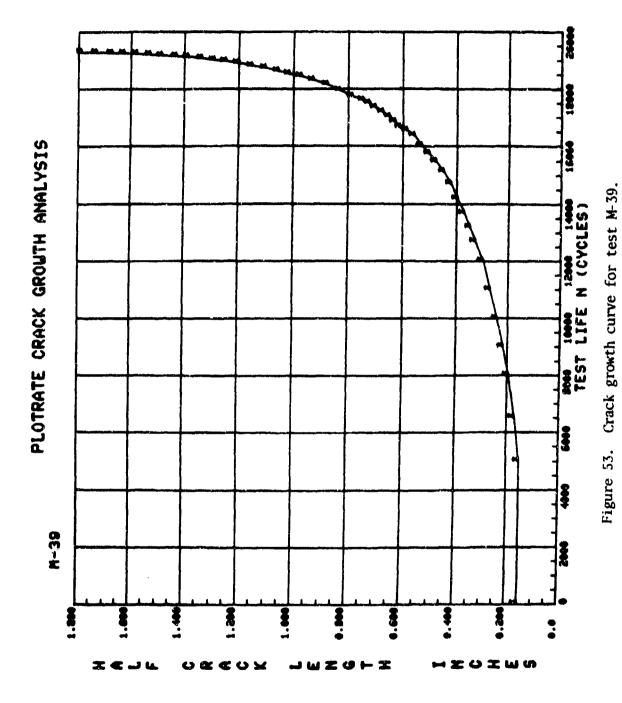


TABLE 52. DATA TABULATION FOR TEST M-40

CET SPECIMEN 9= 0.250 1H. h= 6.000 IN.

SPECIMEN 40.:

ž

AA = 0.0

* N.L.M.d		PMAX=		TEST FREU= 6.00	.00 HZ.		
ENV IRONMENT	ENVIRONMENT COMBITION:	AMRIENT AIR					
. 0.	CVCLES	A (MEASLRED)	A L PEGRESSI CN)	MULT. CURP. COEFF	X - 4 A X	DELTA K	MQ/ 40
•	•	0.300	0.300	0.983016	15.75	27.51	2.297E-04
~	5000.	G-3C2	0.301	0.989762	27.53	27.53	2-4785-04
~	5050.	0.320	0.326	0.993419	2H . 66	78.66	2.451F-04
*	5100.	0.350	0.350	0.993711	29.71	29.71	2. 381F - 04
ĸ	5150.	0.380	0.375	0.995929	30.78	30.78	2.417F~04
.	5200.	0.430	656.0	0.495754	31.73	31, 73	2.51×F-04
-	5270.	0.430	0.425	0.986265	32.77	32,77	2. 78 F - 04
œ	5340.	0.465	0.455	0.979185	33.94	33.94	3.9565-04
6	5420.	0.515	0.525	0.481372	36.48	36.48	6-6015-04
9	5500.	0.620	0.645	0.991839	40.53	40.53	1.0735-03
	5550.	0.755	0.763	0.996765	44.23	44.23	1.5505-03
12	5570.	0.835	0.827	0.493932	46.10	46.10	2.019E-03
£1	5590	0.850	0.905	0.986585	48.36	48.36	2.5515-03
91	5610.	0.950	0.949	0.981321	50.94	50.04	3.8235-03
5 ;	5630.	1.140	1.169	0.973659	55.45	55.45	h. 317F-03
91	5645.	1.315	1.470	0.927491	61.82	61.82	1.1426-02
17	5650.	1.465	1.505	0,420769	65.39	65.39	1.8345-02
8 2	5652.	1.580	1.662	0.956451	67.76	67.76	3.5745-02
61	5653.	1.770	1.762	0.981666	70.21	70.21	6. 929E - 02

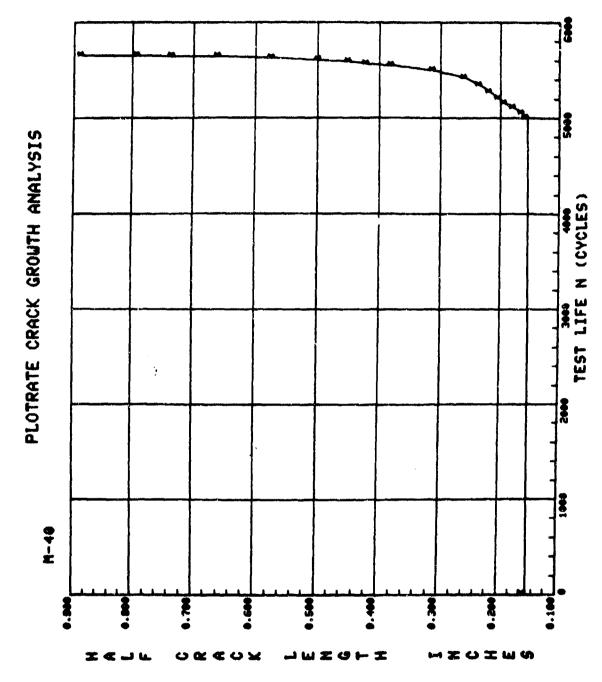


Figure 54. Crack growth curve for test M-40.

TABLE 53. DATA TABULATION FOR TEST M-41

SPECIMEN 40.: M-41

					3306	i.366£-06	3.1115-06	4.2275-06	2538	6.212F-06	7.4.49	8. 766F = 06	30-3700	1 1 505 - 05	1 2 506 - 06	1.23%-03	10 - 57Th - 1	1.0605-05	2 3 4 46 - 05	CD 302.2	20 2760 6	20-36-6	7. 7.15 LOS	2. 34/E - U3	5. 581c - 05	3. 10/E - US	3. 939F - 05	4.357E-05	4.9355-05	5.7715-05	20 - 32 U Z	7 1516-05	8.222E-05
			***************************************	NCC : A A	28.0	٠	7.35	7.86	8.38	8.81		•	10.15	10.66		11.51	70 - 11	12 24	20.21	12 24	13,30	17.02	70.00	00.7	10.41	76	15.24	15.72	16.28	16.89	17.19	17.46	18.10
	6.00 HZ.		× 43		7 ;	16.61	14.72	15.72	16.77	17.61	18.69	19.61	20,36	21.31	22.22	23.02	73.87	24.72	25.79	26.73	27.44	28.03	28.61	30 10	20 22	700.7	34.00	31.45	32,56	33.79	34.17	35.32	36.21
AN= 0.0 IN.	TEST FREO=		MILT, CIRR, COEFE		1011610	100666	1981381	0.997439	0.998844	0.997911	0.998561	0.997644	0.999344	0.999369	0.999282	0.999345	0.999079	0.994594	0.995416	0.996078	0.995789	9263660	0.992488	0.994522	0.996281	0.0073.7		8087740	0.997633	0.999357	0.998334	0.999531	1216660
W* 6.000 IN.			A (REGRESSICN)	0.400	0.307	****	****	166 -0	C * * * * * * * * * * * * * * * * * * *	0.440	0.551	0.546	0.647	0.711	0.171	0.825	0.884	0.944	1.022	1.092	1.146	1.172	1.237	•	1.373	1,385	1.44.1	700 -	1.554	1.654	1.735	1.780	1.853
0.250 IN.	PMEX=	AMBIENT AIR	A (MEA SLRED)	0.300	0.300	0.145	77.0	0.333		r. r	0.545	0.555	0.650	0.105	0.775	0.825	0.880	0.950	1.015	1.060	1.160	1.150	1.240	1.280	1.325	1.400	1.455		CCC • 1	1.000	1.730	1.780	1.850
œ.		ENVIRONMENT CONDITION:	CYCLES	.	2000	1300	19701	24011	20070	01000	33737.	36751.	39614.	42551.	45051.	47051.	49051	51051.	53051.	54551.	55550.	56250.	56950.	57650.	58350.	59050.	60000	6 10001	6200	43460	• (Ku70	03000	63500.
CCT SPECIMEN	PHIN	ENV I RONMEN	• 0	,= 4	~	•	• •		٠ 🗸	1	- (6	•	2 :	(21	61	*	<u>.</u>	91	_		<u>-</u>	20		22	23	24		36	2 6	77	97

TABLE 53. DATA TABULATION FOR TEST M-41 (CONCL)

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			DA /ON	9.7596-05	1.1966-04	1.4376-04	1.83%-04	1.9756-04	2.171E-04	2.424E-04	2.752E-04	- Cu	4. 0066 - 04	4. 766E-04	6.1556-04	7. 966E - 04	9.760E-04	1.1396-03	1.3755-03	1.6096-03
			DELTA K	18,60	19.23	20.02	21.30	21.72	22.26	22.81	23.49	24.34	25.33	26.28	27.52	28.59	29.30	30.22	31.37	32.97
1	.00 HZ.		K-MAX	37.20	38.45	40.03	42,61	43.43	44.51	45.63	16.94	48.67	50.66	52.55	55.03	57.19	58.61	60.44	62.74	65.94
AN= 0.0 IN.	TEST FRE0= 6.00		MULT. CORR. COEFF	0.998272	0.997635	0.998227	0.998777	0.998528	0.997897	0.997465	4.999661	0.999592	0.997357	0.997779	0.995234	0.997829	0.997323	0.997980	0.998933	0.998513
W= 6.000 fN.			A (REGRESSION)	1.934	2.015	2.163	2,365	2.428	2.509	2.592	2.690	2.810	2.945	3.068	3.220	3,346	3.425	3.573	3.639	3.789
A= 0.250 IN.	P MA X=	AMRIENT AIR	A (MEA SLRED)	1.945	2.030	2.155	2.360	2.445	2.500	2.550	559.2	2.805	2.950	3.060	3.200	3,345	3.410	3.525	3.630	3.750
		CONDITIONS	CYCLES	64000.	6450).	65000.	65637.	65800.	.00099	66200.	66400.	66600.	66800.	.05699	67100.	67200.	67250.	67300.	67350.	67400.
CCT SPECIMEN	*2170	ENVIRONMENT CONDITION:	•רא	6.	٥٤	7	32	33	34	35	36	11	38	19	64	7	45	£.\$.7.	4.5

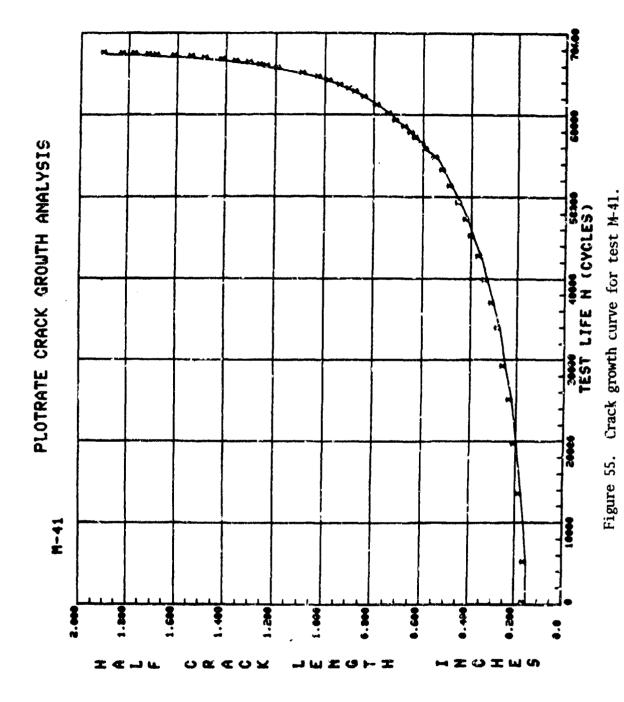


TABLE 54. DATA TABULATION FOR TEST M-42

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CCT SPECIMEN	ec C	0.250 IN.	N= 6.000 IN.	AA= 0.0 IN.			
#7i #d		PMAXa		TEST FREG= 6.	6.00 HZ.		
ENVIPONHENT	T COMOITION:	AMBIENT AIR					
•01	Salla	A (MEA SLEED)	A (REGRESSICN)	MULT, CORP. COEFF	X-M-X	DELTA K	NG/ VO
	ċ		0.309	*	13.97	96.9	3.4496-07
^	5000	~	0.315	0.998859	14.09	7.05	1.343F-06
er.	15000.	0.375	0.371	0.999318	15.31	7.66	
**	21000.	÷,	0.435	0.999058	16.58	8.29	6.3995-06
ď	2550.1.	0.455	0.500	0.998247	17.80	8,90	8-154F-06
\$	25000	0.555	0.558	0.999554	18.82	9.41	9,9616-06
_	31800.	0.615	0.616	0.999968	19.79	06.6	1.1596-05
Œ	34200.	0.675	0.674	0.599975	20.74	10.37	1.300F-05
σ	36400.	0.735	0.735	0.999984	21.68	10.84	1.4756-05
2	38400	~	0.795	9666660	22.58	11,29	1.532E-05
11	* 0300	0.855	U.854	0.999514	23.45	11.72	1.674E-05
12	, 66125	0.915	0.914	0.997976	24.31	12,15	1.906F-05
13	418NA.	o	0.980	0.498792	25.22	12.61	2.1956-05
14	45100.	_	1.039	0.999442	26.00	13.00	2.5116-05
5	462MI.	_	1.095	0.999518	26.17	13,38	2.1746-05
16	47350.		1.162	0.998990	27.64	13.82	3.165E-05
11	48 2(.)•		1.218	0.498979	28.37	14.18	3.460E-05
8.	46350.		1,301	0.999473	29.41	14.71	3.937E-05
61	50000	1.365	1.361	0.999349	30.17	15.09	4.369E-05
ار د	50640.	٠.	1.409	0.959180	30.17	15,38	4.846E-05
71	51280.	•	1,473	098666*0	31.57	15.78	5.38BE~05
22	51860.	•	1.534	0.999568	32.31	16.16	5.9546-05
7.3	52690.	~	1.641	0.999650	33.62	16.81	7.144E-05
24	53480.	•	1.761	0.999250	35.09	17.54	8.598E-05
2	54160.	۳.	1.885	405666.0	36.60	18,30	9,980E-05
26	54670.	٠.	1.989	0.999152	37.88	18,94	1.1625-04
7.	55050	2.065	2.079	0.997678	38.99	19,50	1.3396-04
ar	\$5500.	2.150	2.202	0.998819	40.53	20.26	1.5686-04

TABLE 54. DATA TABULATION FOR TEST M-42 (CONCL)

25-h : 0N h3h1 J3d5

FINITION TOWNITION: AMERIENT AIR FINITIONWENT CONDITION: AMERIENT AIR 10.	CCT SPECIMEN		8= 1,250 IN.	W= 0.000 gK.	AN # 19.1) EN.			
AMRIENT AIR AIMEASUPED) AIFEGRESSICNI WULT, CORP., COEFF K-MAX DFLTA K 2.325 2.330 0.9992107 42.16 21.08 2.435 2.423 0.999213 43.36 21.68 2.520 2.586 0.999414 45.55 22.77 2.685 2.730 0.999414 45.55 22.77 2.920 2.529 0.999420 48.10 24.05 2.920 2.529 0.999458 48.10 24.05 2.920 2.929 0.999458 48.10 24.05 3.025 3.157 0.998109 51.76 25.88 3.305 3.309 0.990316 59.99 29.99 3.555 3.626 0.9933110 62.49 31.25 3.755 3.794 0.99245 66.05 33.03	PM-INE		PMAX#		TEST FRED= 6	. 2H DU.		
CYCIES AIMEASLPEDI AIPEASLPEDI AIPEASLPEDI <t< th=""><th>ENV IRONGENT</th><th>CONDITION</th><th>AHRI</th><th></th><th></th><th></th><th></th><th></th></t<>	ENV IRONGENT	CONDITION	AHRI					
55890. 2.325 2.330 0.999283 42.16 21.08 56140. 2.435 2.423 0.999283 43.36 21.68 56140. 2.586 0.999414 45.55 22.77 2.5870. 2.789 0.999414 45.55 22.77 56777. 2.685 2.770 0.999458 48.10 24.05 57148. 2.920 0.9998120 50.42 25.21 57278. 3.025 3.017 0.998109 51.76 25.88 57443. 2.145 3.157 0.998109 51.76 25.88 57500. 3.305 3.309 0.990316 59.99 29.99 57772. 3.555 3.499 0.990316 59.99 29.99 57829. 0.9903110 62.49 33.03 57829. 0.9903110 62.49 33.03	40.	CYCLES		ALFEGRESSICM	MULT, CORP. COEFF	X - X	DFI T& K	V0/ V 0
56140. 2.435 2.423 0.999283 43.36 21.68 56510. 2.586 0.999414 45.55 22.77 56510. 2.586 0.999414 45.55 22.77 56777. 2.685 2.689 0.998120 46.95 23.48 56875. 2.770 0.999458 48.10 24.05 57148. 2.920 2.929 0.998204 50.42 25.21 57278. 3.025 3.017 0.998109 51.76 25.88 57443. 2.145 3.157 0.998109 51.76 25.88 57590. 3.305 3.309 0.990316 56.54 28.27 57772. 3.450 0.990316 59.99 29.99 57772. 3.555 3.794 0.99245 66.05	58	55890.	2.325	2.330	0.999107	47.16	21.08	1 . R 2 35 = 0.4
56510. 2.586 0.999414 45.55 22.77 56777. 2.685 2.689 0.998120 46.95 23.48 56877. 2.770 0.999458 48.10 24.05 57148. 2.920 2.929 48.10 24.05 57148. 2.920 2.929 6.998204 50.42 25.21 57278. 3.025 3.017 0.998109 51.76 25.88 57443. 2.145 3.157 0.998109 51.76 25.88 57590. 3.305 3.309 0.990316 56.54 28.27 57710. 3.450 0.990316 59.99 29.99 57772. 3.555 3.794 0.99245 66.05 33.03	30	56140.	2.435	2.423	0.999283	43.36	21.68	2 02 76 - 04
56777. 2.685 2.689 0.998120 46.95 23.48 56885. 2.770 0.999458 48.10 24.05 57148. 2.920 2.929 0.998204 50.42 25.21 57278. 3.025 3.017 0.998109 51.76 25.88 57278. 3.305 3.309 0.996316 56.54 27.00 57710. 3.450 0.990316 59.99 29.99 57772. 3.555 3.754 0.99245 66.05 33.03	31	56510.	2.580	2.586	717666°U	45.55	22.17	70-3676 6
56885. 2.775 0.999458 48.10 24.05 57148. 2.920 2.929 2.929 2.529 0.998204 50.42 25.21 57278. 3.025 3.017 0.998109 51.76 25.88 57243. 2.145 3.157 0.998109 51.76 27.00 57590. 3.305 3.309 0.990316 56.54 29.99 57710. 3.450 0.990316 59.99 29.99 57772. 3.555 3.794 0.99245 66.05 23.03	32	56777.	2.685	2.689	07.890.0	50.97	11.577	*0 1250 C
57148. 2.920 2.929 0.998204 50.42 25.21 27.20 2.929 0.998109 51.76 25.21 25.21 27.20 2.929 0.998109 51.76 25.88 27.30 27.30 0.990316 59.99 27.30	33	56885.	2.775	2.770	037000	50.07	04.62	+0-1170 °7
57278. 3.025 3.017 0.998104 50.42 25.21 57278. 3.025 3.017 0.998109 51.76 25.88 57443. 2.145 3.157 0.995756 53.99 27.00 57590. 3.305 3.309 0.990316 59.99 29.99 57772. 3.555 3.626 0.99245 66.05 23.03	74	67178	0000	000	BC+66.	67.64	cn • 5 7	7. 300t - U4
57278. 3.025 3.017 0.998109 51.76 25.88 2 57443. 2.145 3.157 0.995756 53.99 27.00 57590. 3.305 3.309 0.990316 56.54 28.27 57710. 3.450 3.499 0.990316 59.99 29.99 57772. 3.555 3.626 0.993110 62.49 31.25 57829. 3.755 3.794 0.999245 66.05 23.03	* •	94170	7.960	676.7	0.998204	50.42	25.21	3.525F-04
57443. 2-145 3-157 0-995756 53-99 27-00 57590. 3-305 3-309 0-990316 56-54 28-27 57710. 3-450 3-499 0-990316 59-99 29-99 57772. 3-555 3-626 0-993110 62-49 31-25 57829. 3-754 0-99245 66-05 23-03	ر ز	5/2/8.	3.025	7.017	0.998139	51.16	25.88	4.0795-04
57590. 3.305 3.309 0.990316 56.54 28.27 57710. 3.499 0.990316 59.99 29.99 57772. 3.555 3.626 0.993110 62.49 31.25 57829. 3.755 3.794 0.999245 66.05 23.03	36	57443.	2.145	3.157	95156	53,99	27.30	5.1576-04
57710. 3.460 3.499 0.990316 59.99 29.99 57772. 3.555 3.626 0.993110 62.49 31.25 57829. 3.755 3.794 0.99245 66.05 33.03	37	57590	3,305	3,309	0.487023	5,6	76 86	7000
57772. 3.555 3.626 0.993110 62.49 31.25 57829. 3.754 0.999245 66.05 33.03	38	57710.	3.450	3.499	0.990316	00 05	200	F1-36-26-1
3.755 3.794 0.999245 66.05 33.03	39	57772.	3,555	3,676	010000	67.63	64.43	1.0135-03
3.174 0.499245 66.05 23.03	07	6.70.00		2000	D117 64 - D	44.70	27.16	Fnードング・T
	2	. 6.70) C	٠٤/ ٥٠	3.144	0.499245	66.05	33.03	1.8485-03

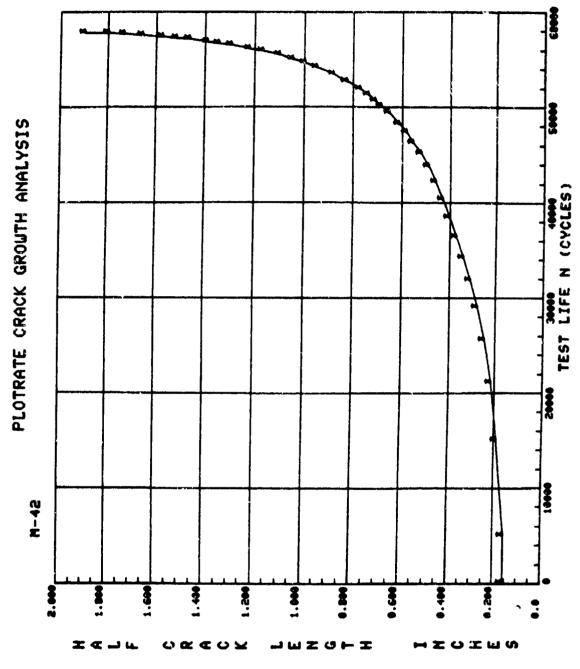


Figure 56. Crack growth curve for test M-42.

FABLE 55. DATA TABULATION FOR TEST M-43

H-43

SPECIMEN 40.:

20.71 22.27 23.24 23.89 14.09 17.46 9.60 24.85 25.27 25.71 27.00 27.58 28.18 29.02 59.62 30.73 11.22 26.45 11.73 32.28 34.61 35.43 36.31 30.21 33.51 DEL TA 19.64 20.71 21.57 22.27 23.24 23.24 23.24 25.37 26.45 27.00 27.00 29.02 29.02 30.73 31.73 33.28 15.79 17.46 18.77 60.41 35.43 36.31 34.61 TEST FREU= 6.00 HZ WULT. COPR. COEFF 0.998735 0.999637 0.999543 0.969519 0.999533 0.951879 0.997091 1.997654 0.996506 677586*0 0.985974 0.985305 0.991999 0.992846 0.995+75 0.999699 3598636 1.984117 9986660 0.999481 1.999245 3.999595 0.987821 0.998222 4A= 0.0 AIREGRESSICH W= 6.000 IA. 0.395 0.774 0.878 0.953 1.113 0.673 1.269 . 164 0.555 0.984 0.315 1.016 . 445 .486 1.722 1,071 50%. .531 .631 AMBIENT AIR A (MEA SURED! 0.315 0.475 0.545 0.545 0.505 0.725 0.725 0.860 0.960 1.100 1.015 1.265 1.325 1.365 1.405 .630 .445 064. .530 .870 0.250 IN. P HA X= ENVIRONMENT CONDITION: 3190. 5728. 5978. 7800. 0750. 11500. 9500. 28nu. 3700. 3970. 4420. 4578. 4728. 4928. 5128. 6178. 5328. 5528. 5978. 6078. 6378. 6578, SP EC IMEN 10. *ZI Wd בכד

4.2386-05 5.0326-05 5.7056-05

2.038F-05 2.863£-05

8.61 X - 06

DA /ON

3.4726-05

6, 102E -05 7, 074E -05 7, 786E -05 1, 041E -04

1.036E-06 1.119E-06 1.118E-06 1.177E-06 1.278E-06 1.459E-06

1.91% - 04 2.010£ - 04 2.047£ - 04

2.1176-04 2.2316-64 2.3746-04 2.8526-04 3.1816-04

TABLE 55. DATA TABULATION FOR TEST M-43 (CONCL)

TEST FREG* 6.00 HZ.

4A= 0.0 IN.

W= 6.000 IN.

R# 0.250 IN.

CCT SPECIMEN

=7Î Wd

PMAX=

Special No.: 4-43

A (PEGRE SSICN I) WULT., CORR., COEFF K—MAX DELIA K DA/DM 1. 890 1. 899 1. 999 37.51 36.77 3. 904E-04 1. 960 1. 959 0. 998416 37.51 37.51 37.51 3. 904E-04 2. 925 2. 021 0. 998410 38.27 39.20 5. 026E-04 2. 145 2. 145 0. 998410 39.20 39.20 5. 026E-04 2. 145 2. 145 0. 998410 39.20 39.20 5. 026E-04 2. 205 2. 200 0. 998200 40.51 40.51 5. 026E-04 2. 245 2. 250 0. 998200 41.69 41.69 41.69 41.69 41.69 41.69 41.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.60 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 42.69 <t< th=""><th>ENVIOLUMENT CONDITION:</th><th>: AMRIENT AIR</th><th></th><th></th><th></th><th></th><th>!</th></t<>	ENVIOLUMENT CONDITION:	: AMRIENT AIR					!
1.899 0.998118 36.77 36.77 36.77 2.021 0.997916 37.51 37.51 37.51 2.021 2.021 0.997916 33.27 38.27 38.27 2.021 2.021 0.9997913 39.20 39.20 39.20 2.145 0.9997466 39.32 39.32 39.32 2.250 0.9997466 39.32 39.32 39.32 2.250 0.993980 41.69 41.69 41.69 41.69 41.69 41.69 41.69 41.69 41.69 41.69 41.69 41.69 42.53 42.01		A (MEA SURED!	A (REGRESSICN)	_	K-MAX	DELTA K	NG/ 40
1.959 1.959 1.959 1.959 1.959 2.021 1.959 1.998410 2.021 2.021 1.998410 2.145 1.999113 19.20 19.99.20 2.145 1.998200 1.998200 2.250 1.998200 2.250 1.998320 2.476 1.998320 2.476 1.998320 2.476 1.999317 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 2.516 1.999317 4.06 4.06 4.06 2.516 1.9986681 3.146 1.991863 2.739		1.890	1.899	0.998118	36.77	36.77	3- 904F - CA
2.021 0.998410 38.27 38.27 2.046 0.999466 39.20 39.20 2.145 0.999466 39.20 39.20 2.200 0.998200 40.51 40.51 2.250 0.998200 41.13 41.69 2.293 0.99380 41.69 41.69 2.293 0.99380 42.01 42.01 2.318 0.993826 42.01 42.01 2.358 0.993326 42.53 42.53 2.476 0.993312 44.66 44.66 2.516 0.993317 45.84 45.86 2.566 0.993317 45.84 45.86 2.566 0.993317 45.84 45.84 2.566 0.993317 45.84 45.84 2.66 0.995035 47.34 47.34 2.66 0.995035 47.34 47.34 2.66 0.995035 47.34 47.34 2.66 0.995035 47.34 47.34 3.67 0.997854 57.57 57.57 3.703 <td></td> <td>1.960</td> <td>1.959</td> <td>0.997916</td> <td>37.51</td> <td>37.51</td> <td>としたこと</td>		1.960	1.959	0.997916	37.51	37.51	としたこと
2.096		2.025	2.021	0.998410	38.27	38.27	4. 5916-06
2.145 0.999466 39.82 39.82 2.200 0.998200 40.51 40.51 2.250 0.99300 41.69 41.69 2.293 0.993980 41.69 41.69 2.318 0.993980 41.69 42.01 2.358 0.993326 42.53 42.53 2.476 0.993316 44.60 44.66 2.476 0.993317 45.26 45.26 2.566 0.993317 45.26 45.26 2.566 0.993317 45.84 45.84 2.566 0.993317 45.84 45.84 2.566 0.993317 45.84 45.84 2.566 0.993317 45.84 45.84 2.668 0.993317 45.84 45.84 2.668 0.9935035 47.34 47.34 2.666 0.995035 47.34 47.34 3.146 0.995681 51.73 51.73 3.367 0.997854 57.57 57.57 3.571 0.991863 64.08 64.08		2.050	2.096	0.999113	39.20	39.20	5, 029F-04
2.200 0.998200 40.51 40.51 2.250 0.99540 41.13 41.69 2.218 0.995436 42.01 42.01 2.318 0.995436 42.01 42.01 2.358 0.995326 42.53 42.53 2.476 0.993316 44.60 44.60 2.516 0.993317 45.26 45.26 2.566 0.993317 45.26 45.26 2.566 0.993317 45.26 45.26 2.566 0.993317 45.26 45.26 2.566 0.993317 45.26 45.26 2.566 0.995035 47.34 47.34 2.717 0.995035 47.34 47.34 2.842 0.995631 49.14 49.14 3.367 0.978641 51.73 51.73 3.367 0.978750 61.38 61.38 3.703 0.991863 64.08 64.08		2.145	2.145	994660	39.82	39.82	5.3065-04
2.250 0.996404 41.13 41.69 2.293 0.993980 41.69 41.69 2.318 0.993980 42.69 42.01 2.358 0.993326 42.53 42.53 2.433 0.993316 42.53 42.53 2.476 0.9933124 44.60 44.60 2.566 0.993317 45.26 45.26 2.566 0.993317 45.84 45.86 2.608 0.995035 47.34 47.34 2.842 0.995035 47.34 47.34 2.842 0.995035 47.34 47.34 3.146 0.9950421 49.14 51.73 3.367 0.97854 57.57 57.57 3.571 0.99760 61.38 61.38 3.703 0.991863 64.08 64.08		2,205	2.200	0.998200	40.51	40.51	5.899F-04
2.293 0.993980 41.69 41.69 41.69 2.318 0.995436 42.01 42.01 42.01 2.358 0.995436 42.01 42.53 42.53 2.476 0.993316 43.50 44.06 2.476 0.993316 45.26 44.06 2.566 0.993317 45.26 45.26 2.608 0.993317 45.34 47.34 2.615 0.995035 47.34 47.34 2.615 0.995035 47.34 49.14 49.14 2.615 2.608 0.995035 47.34 47.34 2.615 0.995035 47.34 51.73 31.46 0.978046 53.81 51.73 31.45 0.978046 53.81 51.73 51.73 3.367 0.991863 64.08 61.38 64.08		2.245	2.250	0.996404	41.13	41.13	5.9655-04
2.318 0.995436 42.01 42.53 2.433 0.993326 42.53 42.53 2.435 0.993316 43.50 43.50 2.476 0.993312 44.06 44.06 2.516 0.993317 45.26 45.26 2.566 0.993317 45.26 45.26 2.608 0.995035 47.34 47.34 2.61 0.995035 47.34 47.34 3.015 0.9956641 51.73 51.73 3.367 0.97854 53.81 53.81 3.571 0.991863 64.08 64.08		2.250	2.293	0.993980	41.69	41.69	6.809F-04
2.358 0.993326 42.53 42.53 2.433 0.993316 43.50 43.50 2.476 0.9933124 44.06 44.06 2.516 0.990327 44.60 44.60 2.566 0.990379 45.26 45.26 2.608 0.993317 45.84 45.84 2.717 0.993317 45.84 47.34 2.717 0.995035 47.34 47.34 2.642 0.995681 51.73 51.73 3.015 0.996681 51.73 51.73 3.367 0.978574 57.57 57.57 3.571 0.991863 64.08 64.08		2.330	2.318	0.995436	42.01	42.01	7.2585-04
2.433 0.993316 43.50 43.50 2.476 0.993124 44.06 44.06 2.516 0.990327 44.60 44.60 2.566 0.990379 45.26 45.26 2.608 0.993317 45.84 45.84 2.17 0.993317 45.84 47.34 47.34 2.17 0.995035 47.34 47.34 47.34 3.015 0.996681 51.73 51.73 51.73 3.146 0.978661 52.73 51.73 51.73 3.367 0.97857 57.57 57.57 3.571 0.991863 64.08 64.08		2.345	2.358	0.993326	42.53	42.53	7, 72%-04
2.476 0.993124 44.06 44.06 2.516 0.990327 44.60 44.60 2.566 0.990379 45.26 45.26 2.608 0.993317 45.84 45.84 2.117 0.995035 47.34 47.34 2.117 0.995035 47.34 47.34 2.842 0.996681 51.73 51.73 3.015 0.9786681 51.73 51.73 3.367 0.978574 57.57 57.57 3.571 0.991863 64.08 64.08		2.435	2.433	0.993316	43.50	43.50	8-2935-04
2.516 0.990327 44.60 44.60 2.566 0.993317 45.26 45.26 2.608 0.993317 45.84 45.84 2.717 0.995035 47.34 47.34 2.842 0.995035 47.34 47.34 3.015 0.996681 51.73 51.73 3.146 0.978681 51.73 51.73 3.367 0.978574 57.57 57.57 3.571 0.991863 64.08 64.08		2.485	2.476	0.993124	44.06	44.06	8-305E-04
2.566 0.993317 45.26 45.26 2.608 0.993317 45.84 45.84 2.717 0.995035 47.34 47.34 2.842 0.993421 49.14 49.14 3.015 0.996681 51.73 51.73 3.146 0.978946 53.81 53.81 3.367 0.978574 57.57 57.57 3.571 0.991863 64.08 64.08		2.515	2.516	0.990327	09.44	44.60	9.5765-0
2.608 0.993317 45.84 45.84 45.84 2.717 0.995035 47.34 47.34 47.34 47.34 47.34 3.015 0.995035 47.34 47.34 47.34 3.015 0.998681 51.73 51.73 51.73 3.146 0.978574 57.57 57.57 57.57 3.571 0.991863 64.08 64.08 64.08		2.560	2.566	0.990979	45.26	45.26	9.4796-0
2.717 0.995035 47.34 47.34 47.34 2.842 0.993421 49.14 49.14 49.14 49.14 3.146 0.979946 53.81 53.81 53.81 3.367 0.97854 57.57 57.57 57.57 3.571 0.987560 61.38 64.08 64.08		2.600	2.608	0.993317	45.84	45.84	9.981E-0
2.842 0.993421 49.14 49.14 50.14 3.14 51.73 3.146 0.979046 53.81 51.73 3.367 0.978574 57.57 57.57 3.571 0.987560 61.38 64.08 64.08		2.745	2.717	0.995035	47.34	47.34	1.231E-0
3.015 0.986641 51.73 51.73 2 3.146 0.979046 53.81 53.81 3.367 0.978574 57.57 57.57 4 3.571 0.991863 64.08 64.08		2.825	2.842	0.993421	49.14	49.14	1.5776-6
3.146 0.979046 53.81 53.81 53.81 3.367 0.978574 57.57 57.57 4 3.571 0.987560 61.38 61.38 7.73 64.08 64.08		3.010	3.015	0.986681	51.13	51.73	2.2725-0
3.367 0.978574 57.57 57.57 4 3.571 0.987560 61.38 61.38 7 3.703 0.991863 64.08 64.08		3.125	3.146	0.979046	53.81	53.81	3.3716-0
3.571 0.987560 61.38 61.38 3.703 0.991863 64.08 64.08		3,305	3.367	0.978574	57.57	57.57	4. 731F-0
3.703 (1.991863 64.08 64.08		3.510	3.571	0.987560	61.38	61.38	7.2035-03
		3,710	3, 703	0.991863	90.49	64.08	9. RB0E-0

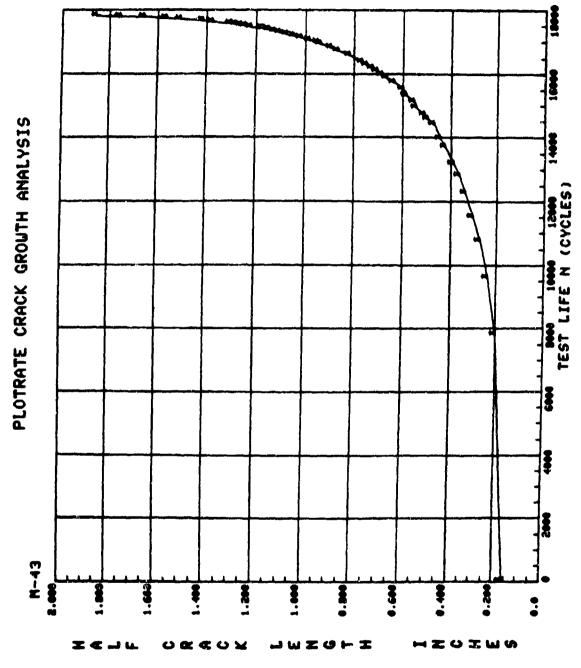


Figure 57. Crack growth curve for test M-43.

TABLE S6. DATA TABULATION FOR TEST M-44

SPECIMEN NO.: 4-46

MA X=			TEST FRE0= 6.	• 21: 00• 9		
2MBIENT	AIR					
4	ā	A I REGRESSION)	MULT. CORR. COEFF	K-HAX	DEL TA K	DA /ON
0.305		0.305	0.999992	13.86	13.86	2.60%-04
0.330		0.332	0.998255	14.47	14.47	•
0.365		0.354	0.968082	14.94	14.94	1. 982E - 04
0.405		0.389	0.972113	15.67	15.67	2.5386-04
		0.472	0.932581	17.29	17.29	2.7576-04
0.515		997.0	0.568418	17.16	17.16	2.682E-05
		0.504	0.616340	17.88	-	4.1976-06
		0.548	0.762981	18.65	ė	2.0906-06
0.635		0.640	0.915411	20.19	20.19	3.4836-06
0.755		0.780	0.962777	22,36	22.36	8.031E-06
0.810		0.848	0.943519	23.36	23.36	1.1058-05
0. 865		0. P96	0.978235	24.05	24.05	.96 TE
0.956		0.059	0.992579	24.93	24.93	3.1126-05
1.020		1.030	1.994586	25.90	25.90	4.4586-05
1.075		1.083	0.994864	26.61	26.61	5.687E-05
1.145		•	0.998810	27.48	27.48	7.2166-05
1.230		1.234	0.997552	28.57	28.57	9.600E-05
1.255		1.295	0.997684	29.35	29.35	1.1746-04
		•	0.998789	30.16	30.16	1.40X-04
1.425		1.422	•	30.93	30.93	1.6456-04
1.485		1.480	17.998477	31.65	31.65	1.91X-0
1.575		1.573	0.983098	32.79	32.79	72 %
1.675		1.690	1.978641	34.23	34.23	1408
. 78		1.807	0.978117	35.65	35.65	3.5306-04
1.950		1.922	0.978558	37.06	37.06	937
1.955		2.028	0.975703	38.37	38.37	4.371F-04
10		•	0.970063	39.52	39.52	4.9586.04
2,200						

TABLE 56. DATA TABULATION FOR TEST M-44 (CONCL)

SPECIMEN NO.: 4-+4

			DELTA K DA /DN	41.80 7.261E-04			45.61 1.1515-03	47.03 1.3885-03		50.03 2.0685-03	51.48 2.512F-03		55.12 4.063E-03	7.33 6.009E-03	58.96 7.7256-03		1. 444F-02
	, н7.		K-4AX DEL	41.80 41					87 09.87								
Ahr i)ci) IN.	1EST FREQ= 6.00 H7.		WULT. COPR. COEFF	9916660	£10506*0				0.997452		1). 498954	0.496078		0.984738	0.990977	0.093219	7964367
M= 6.000 8A.			ALREGPESSICNI	2.302	2.396	2.490	2.591	2.694	2.805	2.103	2.599	3,109	3.225	3.354	3.444	3,593	3.733
B= 0.250 IN.	P MA X=	AMBIENT AIR	A I MEA SLPED!	2.300	2.350	2.490	2.590	2.655	2, 755	2,855	3.000	3.110	3.210	3,335	3,435	3,555	3, 735
		ENVIRONMENT CONDITION:	CVCLES	50086.	50150	50205.	50255.	50298.	50337.	50365.	5038B.	50409	50427.	50442.	50450.	50459	50465
CCT SPECIMEN	- N H d	THE HUCK I ANS	*0×	50	30	3.1	32	33	34	35	36	37	38	39	C *	41	42

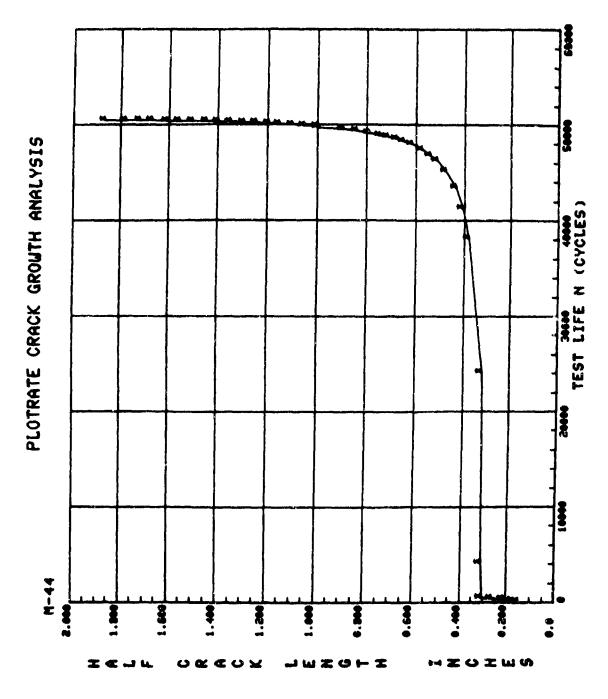


Figure 58. Crack growth curve for test M-44.

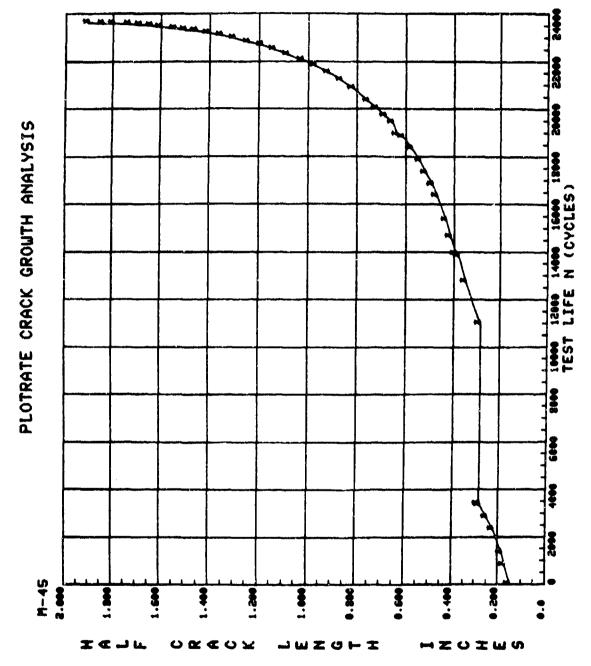
TABLE 57. DATA TABULATION FOR TEST M-45

3.455e-05 3.4149-05 3.594e-05 2.921F-05 3.5135-05 4.851c-05 3.887F-05 3.056E-06 2.3 P.PE-05 3,469F-05 3,744£-05 7.812F-05 8.805E-05 9.216F-05 1.004F-04 1.807F - 0.2.05c E - 0.4 2.332F-05 4.145F-05 4.689 - 05 5.358F-05 6.425-05 6.8334-05 7.357F-05 1.5828-04 1.17%-04 1.389F - 04 DFLTA K 9.47 10.10 12.62 11.73 14.58 15.38 5.56 6.50 17.23 18.10 19.26 24.06 20,75 21.20 21.69 22.29 23.46 6.04 16.61 15.09 16.76 17.91 18.03 28.45 13.52 19.26 20.83 21.97 22.23 22.91 23.57 24.62 25.20 25.86 26.56 27.51 29.64 311.28 31.59 14.43 34.67 TEST FREU= 6.00 HZ. MULT. CORR. COEFF 0.998862 0.714755 11.997139 0.499053 0.998811 121666-0 0.970864 11.794342 0.927139 0.991185 0.484280 0.496423 0.995665 1.999274 0.999012 0.998600 0.994771 0.989223 0.989128 13.989.148 0.986660 0.992+58 954966.0 0.998704 0.998622 775064.0 0.999880 46 U.U A ! REGRESSICN! W= 6.000 1K. 0.330 0.979 1.028 1.000 1.319 13.444 0.506 0.513 0.544 0.754 0.817 0.862 1.152 1.225 075.1 .426 .495 0.505 0.771 11.937 AMBIENT AIR A (MEA SLRED) 0.565 0.655 0.755 0.780 0.860 0.975 1.145 0.335 0.455 0.565 1.078 1.305 1.430 1.505 1.725 0.820 0.360 0.440 0.940 1.030 0.555 R= 0.250 IN. P MA X= ENVIRONMENT CONDITION: 1300. 2300. 2800. 4602. 5302. 6802. 800 3370. 2739. 3802. 6302. 7802. 8302. 8902. 9402. 20002 20862. 21499. 21790. 20302 76112 SPECINEN NO.: SP EC IMEN 1132115 45000 *7.114 53

TABLE 57. DATA TABULATION FOR TEST M-45 (CONCL)

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CCT SPECIMEN	.0 = A .	.250 IN.	W= 6.000 IN.	4N= 0.0 IN.			
=NIWG		P 4A X=		TEST FRE0= 6.00	.00 HZ.		
ENVIRONMENT CONFITTON:	CONDITION:	AMRIENT AIR					
.07	CYCLES	A (MEA SUFFO)	A (REGRESSICN)	*ULT. CORR. COEFF	K-HAX	DEL TA K	6 4 C
7 6	22040.	2.040	2.042	1066660	38.53	26.97	2.30%
£ ;	222H6.	2.160	2.159	0.999517	39.99	27.99	2.6386
16	22495.	2.270	2.272	17766600	41.42	28.99	3,0306
75	.69927	2.375	2.381	0.999663	42.82	29.97	3.3616
*	22819.	2.485	2.4P3	0.999288	44.16	30.91	3, 7976
÷ :	22959.	2.600	2.594	0.998505	45.65	31.95	4. 3666
33	23097.	5.765	2.719	0.997754	47.38	33.17	5.1875
36	23192.	2.815	2.818	0.998847	48.79	36.16	4.0165
37	23267.	2.910	2.968	0.998937	50.11	35.08	7. 71. 7 4. 9186
æ :	23324.	2.95F	156.2	0.998748	51,36	35.96	7, 714
61	23388.	3.080	3.052	0.998949	52.94	37.06	8. 76.8F
Ç,	23442.	3.155	3, 189	0.999226	54.52	38.16	4776 6
. .	23484.	3.275	3.273	0.996455	55.93	39,15	1.1865
75	17667	3.360	3,363	0.991345	57.50	40.25	1.4566
C *	19261	3,460	3.480	0.985446	59.64	41.74	2,0928
r 4	19667	3.50	3.614	0.989326	62.29	43.57	2.977
	, one >	3.663	3.707	Ú.995235	64.15	16.44	3,9386
0	7 1057	3.805	3.804	0.998174	66.27	46.39	5.2896



F gure 59. Crack growth curve for test M-45.

TABLE 58. DATA TABULATION FOR TEST M-46

TEST FRE0= 6.00 HZ.

AN= 0.0 IN.

h* 6.000 IN.

R= 0.250 IN.

MENT SPECIMEN

= N | X d

P MA X=

SPF; IMFN "O.: M-46

# # # # # # # # # # # # # # # # # # #	
4 ext test test test test	
71 71 71 18	
11	
21	
91	
•	
2.41 023466.0	
0.990435 20.16	
0.986527 20.54	
0.997705 23.11	
0.993434 24.12	
0.996610 25.3	
0.998505 27.48	
	0.998864
0.998864 28.1	
28 28	
29 8 29 8	

TABLE 58. DATA TABULATION FOR TEST M-46 (CONCL.)

SPET INFY NO.: 4-46

×	CCT SPECIMEN		R= 0.750 IN.	W= 6.000 IA.	AN= 0.0 IN.			
CONDITION: AMMIEKT AIR EVCLES A(MEASLRED) A(PEGRESSICN) MULT, CORR, COFF K-MAX DELTA K 129600. 1.455 1.409 0.999876 30.77 21.54 129900. 1.455 1.411 0.9994876 31.42 21.99 130570. 1.630 1.633 0.999467 32.12 22.49 130630. 1.645 1.846 0.999467 33.53 23.47 13150. 1.645 1.846 0.999472 34.46 24.40 13150. 2.065 2.006 0.999473 37.47 26.23 13150. 2.165 0.999473 37.47 26.23 13200. 2.155 2.181 0.999419 38.83 27.18 13200. 2.255 2.292 0.99817 41.67 29.17 13230. 2.256 2.414 0.998643 47.18 33.02 13270. 2.260 2.414 0.99817 41.67 29.17 132850. 2.260 2.414 0.998663 47.18 33.02 132970. 2.865 2.881 0.998693 50.84 35.59 133070. 3.120 3.124 0.998917 55.05 38.54 133170. 3.200 3.21 0.998917 55.05 38.54 133170. 3.200 3.312 0.998915 50.99 41.99 13352. 3.400 3.475 0.998142 62.47 43.73 13352. 3.400 3.475 0.998777 56.57 46.60	* N W d		P MA X=		cqFQ=	. 2н ос.		
CYCLES A (MEASLRED) A (MASLRED)	ENVIRONMENT		ER.T					
129660. 1.410	.Ov	CYCLES		A (PEGRESSICN)		X A X	T A	. NG/ V G
129900. 1.455 1.461 0.999481 31.42 21.99 130140. 1.525 1.518 0.999467 32.12 22.49 130570. 1.630 1.742 0.999467 33.47 22.49 13120. 1.745 1.742 0.999434 34.86 22.49 13120. 1.865 1.896 0.999513 37.47 26.23 13170. 2.065 2.066 0.999434 34.86 24.40 13200. 2.165 2.292 0.999439 38.83 25.18 132200. 2.255 2.292 0.999463 40.27 28.18 13250. 2.265 2.292 0.99863 47.67 28.18 13270. 2.765 2.714 0.99863 47.01 31.50 13280. 2.866 2.866 2.866 48.69 34.80 132910. 2.865 2.811 0.99669 49.71 35.40 133070. 3.045 3.035 0.996905 59.44 36.40 133120. 3.475 3.475 0.996905	56	129660.	1.410	1.409		30.77	21.54	1-017F-04
130140. 1.525 1.518 0.999467 32.12 22.49 130530. 1.633 0.999572 33.53 23.47 130630. 1.636 0.999572 33.53 23.47 131240. 1.845 1.846 0.99941 34.86 24.40 131520. 1.950 1.956 0.999513 37.47 26.23 13170. 2.065 2.066 0.999513 37.47 26.23 13200. 2.165 2.966 0.999513 37.47 26.23 132500. 2.265 2.2414 0.999677 41.67 29.17 132500. 2.265 2.414 0.999683 41.67 29.17 13250. 2.4181 0.999683 42.06 31.50 31.50 13250. 2.4181 0.999683 42.01 31.50 31.50 13250. 2.418 0.999683 42.01 31.50 31.50 31.50 13250. 2.418 0.999683 42.01 32.44 31.40 31.41 31.41 31.41 31.41 31.41 31.4	Ş	129900.	1.455	1.461	0.499281	31.42	21.99	1.138F-04
130570. 1.630 1.633 9,99572 33.53 23.47 130930. 1.745 1.742 0.99574 34.86 24.40 131240. 1.845 1.846 1.846 24.40 131240. 1.956 0.999513 37.47 26.23 13170. 2.065 2.066 0.999919 38.83 27.18 13200. 2.165 2.292 0.999919 38.83 27.18 132200. 2.255 2.292 0.999417 40.27 28.19 132200. 2.255 2.292 0.999467 40.27 28.19 132300. 2.465 0.999467 41.67 29.17 13270. 2.546 0.999463 47.18 31.25 132850. 2.801 2.414 0.99669 43.25 31.25 132910. 2.865 2.811 0.99669 49.81 34.81 13307. 3.126 2.966 2.966 2.966 2.966 2.966 2.966	31	130140.		1.518	1976660	32.12	22.49	1.242F-04
130930. 1.745 1.742 0.99524 34.86 24.40 131240. 1.956 1.956 0.999434 36.13 25.29 131520. 2.065 2.066 0.999412 31.47 26.23 132200. 2.255 2.292 0.999412 41.67 29.17 132300. 2.255 2.292 0.998432 43.25 31.27 132300. 2.546 0.998432 43.25 31.27 132300. 2.540 2.546 0.998433 47.81 31.50 132510. 2.865 2.81 0.996699 49.71 34.80 132970. 2.865 2.881 0.996699 49.71 34.80 132970. 2.960 2.956 0.998905 59.44 35.59 133070. 3.215 3.124 0.996117 55.05 40.09 133170. 3.350 3.351 0.995912 55.45 40.09 133210. 3.475 3.499 0.998142 64.89 45.40 133250. 3.820 3.817 0.994577 56.57 46.60 133260. 3.820 3.817 0.994577 56.57 46.60 133260. 3.820 3.817 0.994577 56.57 46.60 133260. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 56.57 46.60 134500. 3.820 3.817 0.994577 46.60	32	130570.		1.633	9.999572	33.53	23.47	1.4425-04
131240. 1.845 1.846 0.999513 37.47 25.29 131520. 1.956 0.999919 37.47 26.23 13170. 2.065 2.065 2.181 0.999417 37.47 26.23 13200. 2.165 2.181 0.999417 40.27 27.18 27.18 132200. 2.255 2.292 0.999417 41.67 29.17 29.17 132200. 2.556 2.715 2.540 2.546 0.999482 45.40 31.50 13270. 2.540 2.546 0.999483 47.18 33.02 132850. 2.715 2.715 2.715 31.50 31.50 132910. 2.865 2.811 0.998649 47.18 35.59 133020. 3.045 3.035 0.998649 52.04 36.43 133120. 3.271 0.996891 53.44 31.49 133210. 3.475 3.271 0.996895 57.27 40.09 13325.	33	130930.	1.745	1.742	1525660	34.86	24.40	1.651F-04
131520. 1.956 0.999513 37,47 26.23 131770. 2.065 2.066 0.999919 38.83 27.18 132000. 2.165 2.181 0.999919 38.83 27.18 13200. 2.165 2.292 0.999472 40.27 28.19 132300. 2.255 2.292 0.998832 43.25 30.27 132750. 2.660 2.646 0.99663 47.18 33.02 132750. 2.715 2.705 0.996663 47.18 33.02 132750. 2.800 2.705 0.996663 47.18 33.02 132790. 2.811 0.996669 48.69 34.08 133920. 2.865 2.811 0.996669 48.69 34.08 133020. 3.045 3.035 0.996699 49.71 34.80 133120. 3.045 3.126 3.27 0.996699 50.74 37.41 133120. 3.215 3.27 0.996699 57.27 40.09 133250. 3.499 0.996699 57.27 4	34	131240.		1.8+6	0.499434	36.13	25.29	1.887F-04
13170. 2.065 2.066 2.0699919 38.83 27.18 13200. 2.185 2.181 0.999672 40.27 28.19 132200. 2.255 2.292 0.999672 40.27 29.17 132300. 2.465 2.414 0.99882 43.25 30.27 132570. 2.540 2.546 0.99886 43.25 30.27 132570. 2.540 2.546 0.99886 43.00 31.50 132850. 2.80 2.715 0.99669 49.71 34.80 132850. 2.960 2.960 49.71 34.80 132910. 2.960 2.960 49.71 34.80 133070. 3.045 3.035 0.998905 50.44 35.54 133170. 3.215 3.221 0.99906 52.04 36.43 133210. 3.475 3.499 0.999142 55.05 41.99 13325. 3.710 3.817 0.999379 64.85 45.40 <td>32</td> <td>131520.</td> <td></td> <td>1.956</td> <td>0.999513</td> <td>37,47</td> <td>26.23</td> <td>2.1475-04</td>	32	131520.		1.956	0.999513	37,47	26.23	2.1475-04
132000. 2.165 2.181 0.999672 40.27 28.19 132200. 2.255 2.292 0.99317 41.67 29.17 132300. 2.265 2.414 0.99882 43.25 30.27 13250. 2.560 2.546 0.99863 45.00 31.50 132750. 2.715 2.705 0.99863 47.18 33.02 132850. 2.800 2.811 0.99669 49.71 34.80 132910. 2.865 2.881 0.99669 49.71 34.80 132910. 2.960 2.966 0.99803 50.84 36.43 133070. 3.120 3.035 0.99803 50.43 40.09 133170. 3.215 3.221 0.99964 51.27 40.09 133210. 3.475 3.499 0.999379 64.89 45.40 133257. 3.817 0.99379 64.95 45.40 133260. 3.817 0.99379 64.95 45.40 </td <td>36</td> <td>131770.</td> <td></td> <td>2.066</td> <td>0.999919</td> <td>38.83</td> <td>27.18</td> <td>2.356E-04</td>	36	131770.		2.066	0.999919	38.83	27.18	2.356E-04
132200. 2.255 2.292 0.998117 41.67 29.17 132390. 2.465 2.414 0.998832 43.25 30.27 132570. 2.540 2.546 0.99663 45.00 31.50 132750. 2.715 2.775 0.99663 47.18 33.02 132850. 2.800 2.811 0.99669 49.71 34.08 132910. 2.865 2.881 0.99669 49.71 34.80 132970. 2.960 2.956 0.998905 50.71 35.59 133070. 3.045 3.035 0.998905 52.04 35.41 133120. 3.124 0.996897 55.05 36.43 133170. 3.350 3.371 40.09 133210. 3.475 3.499 0.989152 62.47 45.40 133257. 3.817 0.9993794 64.95 45.40 133260. 3.817 0.9994577 56.57 46.60	47	132000.	_	2.181	0.4996.72	40.27	28.19	2.718E-04
132390. 2.465 2.414 0.998882 43.25 33.27 132570. 2.540 2.546 0.996493 45.00 31.50 132750. 2.715 0.99663 47.18 33.02 132850. 2.865 2.811 0.99669 48.69 34.08 132910. 2.865 2.881 0.99669 49.71 34.80 132970. 2.960 2.956 0.99699 49.71 35.59 133020. 3.045 3.035 0.99699 52.04 35.44 133070. 3.124 0.996897 52.04 35.41 133120. 3.221 0.996897 55.05 36.43 133120. 3.221 0.996897 55.05 36.43 133210. 3.475 3.499 0.996895 55.05 41.99 133250. 3.475 3.499 0.993794 64.85 45.40 133250. 3.817 0.994577 56.57 46.60	38	132200.		2.292	0.990117	41.67	29.17	3.156F-04
132570. 2.540 2.546 0.999463 45.00 31.50 132750. 2.715 0.998663 47.18 33.02 132850. 2.865 2.811 0.99669 48.69 34.08 132910. 2.865 2.881 0.99669 49.71 34.80 132970. 2.960 2.956 0.99699 49.71 35.59 133020. 3.045 3.035 0.99699 52.04 35.41 133070. 3.124 0.996897 53.44 37.41 133120. 3.221 0.996897 55.05 38.54 133120. 3.350 3.351 0.996916 57.27 40.09 133210. 3.475 3.499 0.996895 55.99 41.99 13325. 3.600 3.739 0.993794 64.85 45.40 133260. 3.817 0.994577 56.57 46.60	39	132390.		2.414	0.998882	43.25	30.27	3.583F-04
132750. 2.705 0.998663 47.18 33.02 132850. 2.811 0.99679 48.69 34.08 132910. 2.865 2.831 0.996699 49.71 34.80 132970. 2.960 2.956 0.996699 49.71 35.59 133020. 3.045 3.035 0.99699 52.04 35.59 133070. 3.120 3.124 0.996897 52.04 36.43 133120. 3.215 3.271 0.996897 55.05 38.54 133120. 3.351 0.99566 57.27 40.09 133210. 3.475 3.499 0.9989152 65.99 41.99 133235. 3.40 3.57 0.9989152 65.47 45.40 133250. 3.817 0.993794 64.85 45.40 133260. 3.817 0.994577 56.57 46.60	9	132570.		2.546	0.499493	45.00	31.50	4.119E-04
132850. 2.811 0.996796 48.69 34.08 132910. 2.865 2.881 0.996699 49.71 34.80 132970. 2.960 2.956 0.998905 50.84 35.59 133020. 3.045 3.035 0.998905 50.04 36.43 133020. 3.045 3.124 0.996897 52.04 37.41 133120. 3.215 3.221 0.996817 55.05 38.54 133170. 3.350 3.351 0.996817 55.05 41.99 133210. 3.475 3.499 0.9989152 62.47 43.73 133252. 3.710 3.739 0.993794 64.95 45.40 133250. 3.817 0.994577 56.57 46.60	+ 1	132750.		2.705	0.998663	47.18	33.02	5.0095-04
132910. 2.865 2.81 0.996699 49.71 34.80 132970. 2.960 2.956 0.998915 50.84 35.59 133020. 3.045 3.035 0.996897 52.04 36.43 133070. 3.120 3.124 0.996897 53.44 37.41 133120. 3.215 3.221 0.996817 55.05 38.54 133170. 3.350 3.371 0.996817 55.05 41.99 133210. 3.475 3.499 0.9989152 62.47 43.73 133252. 3.710 3.739 0.993794 64.95 45.40 133260. 3.817 0.994577 56.57 46.60	42	132850.		2.411	0.996786	69.84	34.08	5.884E-04
132970. 2.960 2.956 0.998905 50.84 133020. 3.045 3.035 0.996897 52.04 133070. 3.120 3.124 0.996897 53.44 133120. 3.215 3.221 0.996817 55.05 133170. 3.350 3.351 0.995966 57.27 133210. 3.475 3.499 0.988953 55.99 133255. 3.10 3.59 0.993794 64.95 133260. 3.817 0.994577 56.57	43	132910.		2.831	0.996699	49.71	34.80	6. 599E - 04
133020. 3.045 3.035 0.997908 52.04 133070. 3.120 3.124 0.996897 53.44 133120. 3.215 3.221 0.996117 55.05 133170. 3.350 3.351 0.995966 57.27 133210. 3.475 3.499 0.988953 55.99 133235. 3.600 3.626 0.993794 64.95 133260. 3.817 0.994577 56.57	44	132970.		2.056	0.998905	50.84	35.59	7.437F-04
133070. 3.124 0.996897 53.44 133120. 3.215 3.221 0.996117 55.05 133170. 3.350 3.351 0.995966 57.27 133210. 3.475 3.499 0.988953 55.99 133235. 3.600 3.626 0.993794 64.95 133260. 3.817 0.994577 56.57	4.5	13 30 20.		3.035	0.997908	52.04	36.43	8.646 - 04
133120. 3.215 3.221 0.996117 55.05 133170. 3.350 3.351 0.995966 57.27 133210. 3.475 3.499 0.98853 55.99 133235. 3.600 3.626 0.993794 64.95 133260. 3.817 0.994577 56.57	46	133070.		3.124	0.996897	53.44	37.41	1.012F - 03
133170. 3.350 3.351 0.995966 57.27 133210. 3.475 3.499 0.988953 55.99 133235. 3.600 3.625 0.993794 64.95 133257. 3.710 3.739 0.993794 64.95 133260. 3.817 0.994577 56.57	47	133120.	3.215	3.271	0.996117	55.05	38.54	1.2458-03
133210. 3.475 3.499 0.988953 55.99 133235. 3.600 3.625 0.993794 64.95 133257. 3.817 0.994577 56.57	€	1331 70.	3.350	3.351	9.995966	57.27	40.09	1.6805-03
133255. 3.640 1.625 0.993794 62.47 133252. 3.710 3.739 0.993794 64.95 133260. 3.820 3.817 0.994577 56.57	64	133210.	3.475	3.499	0.988953	66.55	41.99	2.391F-03
133252. 3.710 3.739 0.993794 64.95 133260. 3.820 3.817 0.994577 56.57	20	133235.	3.600	1.625	0.989142	62.47	43.73	3.15%-03
3.820 3.817 0.994577 56.57	51	133252.		3.739	0.993794	64.85	45.40	4.336E-03
	25	133260.	3.820	3.817	0.994577	56.57	46.60	5.740F-03

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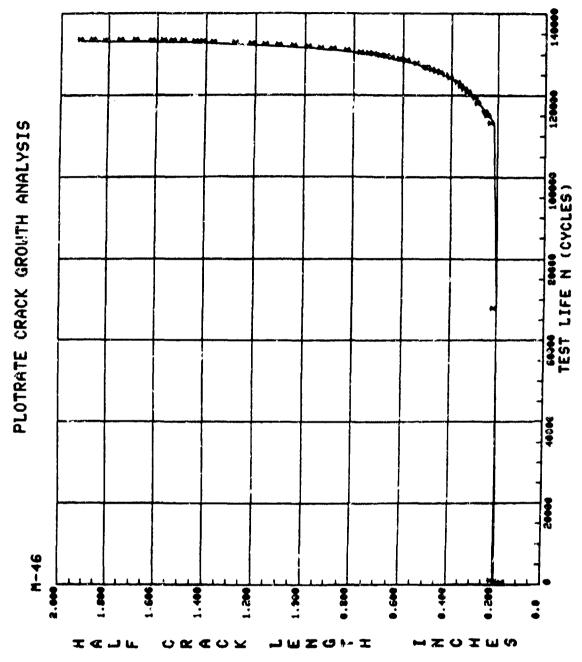


Figure 60. Crack growth curve for test M-46.

TABLE 59. DATA TABULATION FOR TEST M-47

v.	CCT SPECTHER		A* 0.250 IN.	H= 6.000 FR.	AA= 0.0 [N.			
AMMIENT AIR A(MEASLRED) A(REGRESSICN) MULT. CORR. COEFF K-MAX DELTA K 0.305 0.335 0.326 0.994298 13.89 4.17 0.335 0.332 0.902142 14.23 4.27 0.430 0.375 0.902142 15.38 4.61 0.430 0.520 0.992142 15.38 4.61 0.455 0.652 0.993131 19.19 5.49 0.526 0.652 0.999129 19.89 5.97 0.665 0.665 0.999129 19.89 5.97 0.705 0.727 0.987996 20.58 6.17 0.705 0.727 0.987996 21.55 6.47 0.705 0.705 0.998796 21.55 6.47 0.705 0.705 0.998796 21.55 6.47 0.706 0.705 0.998796 21.55 6.47 0.706 0.705 0.998796 21.55 6.47 0.707 0.9993 0.998783 22.51 6.75 0.995 0.998 0.998783 25.39 7.16 1.290 1.137 0.998415 26.27 7.88 1.290 1.299 0.999466 22.40 8.98 1.395 1.395 0.999466 22.40 8.98 1.395 1.395 0.999466 22.40 8.98	KI K		P MA X=		FREG	. 2H 110.		
CVCLES A(MEASLRED) A(REGRESSICNI) MULT. CORP. COFF K-MAX DELTA K 0.0 0.336 0.336 0.336 0.332 0.934712 14.23 4.21 200. 0.355 0.332 0.992712 14.23 4.21 500. 0.355 0.332 0.992712 15.38 4.21 16200. 0.475 0.375 0.992142 15.38 4.61 182400. 0.475 0.491 0.94488 17.64 5.29 182400. 0.575 0.580 0.99331 19.19 5.49 1822400. 0.575 0.580 0.99331 19.19 5.76 1822400. 0.575 0.664 0.98656 21.55 6.17 141200. 0.675 0.674 0.98656 21.55 6.77 15737. 0.765 0.727 0.98656 21.55 6.97 167737. 0.765 0.799 0.997317 22.51 6.97 1	ENV I RONMENT	CONDITION:	<u> </u>					
0. 0.305 0.306 0.306 1.321 0.994298 13.89 4.17 200. 0.335 0.321 0.734712 14.23 4.27 500. 0.435 0.332 0.902142 15.38 4.61 16200. 0.475 0.491 0.902142 15.38 4.61 105700. 0.475 0.491 0.934685 17.64 5.29 105700. 0.520 0.93181 18.31 5.49 122100. 0.655 0.659 0.99311 19.19 5.76 132100. 0.675 0.672 0.98796 20.58 6.17 141200. 0.675 0.672 0.98796 20.58 6.17 15737. 0.765 0.755 0.98966 21.98 6.75 167737. 0.765 0.799 0.999 21.98 6.75 167737. 0.786 0.99666 21.98 7.16 187737. 0.885 0.986 0.99943 22.36	02	CYCLES		AIREGRESSICNI	CARR.	K-MAX		0A /0 ts
200. 0.335 0.321 0.034712 14.23 4.27 16200. 0.430 0.332 0.491300 14.48 4.34 16200. 0.430 0.4375 0.902142 15.38 4.61 89200. 0.430 0.491 0.944685 17.64 5.29 105700. 0.520 0.580 0.994685 17.64 5.29 105700. 0.675 0.680 0.994729 18.31 5.49 132100. 0.655 0.682 0.994729 19.49 5.76 14200. 0.6675 0.667 0.987995 20.58 6.17 15737. 0.760 0.757 0.98566 21.56 6.77 167737. 0.760 0.755 0.98966 21.56 6.97 167737. 0.760 0.799 0.99739 22.26 6.97 17737. 0.986 0.99739 22.36 7.16 17737. 1.060 1.058 0.998350 22.31 4.19 </td <td></td> <td>•</td> <td>_</td> <td>0.306</td> <td>0.994298</td> <td>13.89</td> <td></td> <td>5.352F-05</td>		•	_	0.306	0.994298	13.89		5.352F-05
500. 0.355 0.332 0.49130U 14.48 4.34 16200. 0.475 0.491 0.902142 15.38 4.61 16200. 0.475 0.491 0.934685 17.64 5.29 162700. 0.520 0.529 0.93131 19.19 5.29 122400. 0.625 0.622 0.991729 19.49 5.76 132100. 0.625 0.675 0.981795 19.49 5.97 141200. 0.675 0.674 0.98795 20.58 6.17 157737. 0.765 0.727 0.98756 21.94 6.75 167737. 0.765 0.997302 21.55 6.97 167737. 0.785 0.99366 21.94 6.77 167737. 0.7885 0.99366 21.94 6.97 167737. 0.9885 0.99366 21.94 7.16 18737. 1.060 1.058 0.9948783 25.39 7.16 197737. 1.130 1.123 0.999466 29.40 3.94 201951. <td< td=""><td>~</td><td>200.</td><td></td><td>0.321</td><td>0.934712</td><td>14.23</td><td>4.27</td><td>4.068F-06</td></td<>	~	200.		0.321	0.934712	14.23	4.27	4.068F-06
16200. 0.430 0.375 0.902142 15.38 4.61 89200. 0.491 0.9346R5 17.64 5.29 105700. 0.475 0.491 0.9346R5 17.64 5.29 105700. 0.520 0.993031 19.19 5.49 122400. 0.675 0.622 0.9940729 19.89 5.97 141200. 0.675 0.675 0.98796 20.58 6.17 15737. 0.760 0.727 0.98856 21.98 6.47 162737. 0.760 0.755 0.98966 21.98 6.97 162737. 0.760 0.755 0.98966 21.98 6.97 162737. 0.760 0.755 0.98966 21.98 6.97 177737. 0.885 0.9863 0.999732 22.51 6.97 187737. 1.060 1.058 0.999833 24.61 7.88 197737. 1.230 1.234 0.9998415 28.56 4.19	m	500.		0.332	0.491300	14.48	4.34	2,21+6-06
89200. 0.475 0.491 0.934685 17.64 5.29 105700. 0.529 0.93468 17.64 5.29 122400. 0.520 0.990729 19.19 5.49 132100. 0.625 0.622 0.98796 20.58 6.17 141200. 0.675 0.674 0.98796 20.58 6.17 15737. 0.705 0.727 0.98526 21.55 6.47 162737. 0.705 0.755 0.98526 21.56 6.75 162737. 0.706 0.755 0.985317 22.51 6.75 162737. 0.709 0.790 0.997392 23.22 6.97 162737. 0.885 0.9883 0.997392 23.22 6.97 177737. 0.935 0.935 0.99833 24.61 7.88 187737. 1.060 1.058 0.998433 25.34 7.62 192737. 1.230 1.234 0.99845 29.40 8.98 <	❖ :	16200.	-	0.375	0.902142	15.38	4.61	9.2325-07
105700 0.520 0.529 0.95310 18.31 5.49 122400 0.625 0.622 0.993031 19.19 5.76 132100 0.625 0.622 0.993031 19.19 5.76 132100 0.645 0.993031 19.19 5.76 141200 0.675 0.644 0.98756 21.55 6.17 157737 0.760 0.727 0.985266 21.55 6.47 167737 0.765 0.796 21.55 6.47 167737 0.765 0.99668 21.98 6.75 167737 0.785 0.997301 22.51 6.75 17737 0.885 0.997301 22.51 6.97 17737 0.985 0.997301 22.51 7.16 17737 0.995 0.99733 24.61 7.38 182737 1.060 1.099 0.998418 25.39 7.62 197737 1.230 1.234 0.998418 22.40	Ś	89200.	_	165.0	0.934685	17.64	5.29	1.147F-06
122400. 0.5875 0.580 0.993031 19.19 5.76 132100. 0.622 0.990729 19.49 5.97 141200. 0.625 0.664 0.98796 20.58 6.17 152737. 0.765 0.757 0.98766 21.55 6.17 152737. 0.760 0.755 0.98966 21.98 6.59 162737. 0.765 0.790 0.997301 22.51 6.75 16737. 0.885 0.883 0.997302 23.86 7.16 17737. 0.986 0.99733 24.61 7.38 187737. 0.995 0.99973 26.27 7.86 187737. 1.060 1.058 0.9998415 28.56 1.99 197737. 1.230 1.234 0.9998415 28.56 3.57 200447. 1.239 0.999863 29.94 8.98 201951. 1.343 0.999963 29.94 8.98 201966. 1.343 0	•	105700.	•	0.529	0.953108	18.31	5.49	1.5636-06
132100. 0.625 0.622 0.9901729 19.49 5.97 141200. 0.675 0.664 0.981995 20.58 6.17 157737. 0.765 0.727 0.985266 21.55 6.47 162737. 0.760 0.755 0.989668 21.98 6.59 162737. 0.765 0.790 0.99317 22.51 6.56 162737. 0.835 0.883 0.997392 23.22 6.97 17737. 0.9865 0.996416 23.86 7.16 17737. 0.935 0.936 0.99933 24.61 7.38 187737. 1.060 1.058 0.998350 27.31 4.19 192737. 1.130 1.137 0.998415 28.56 3.57 200447. 1.299 0.999563 29.40 8.98 201951. 1.343 0.999563 29.94 8.98 201952. 1.395 1.395 0.999963 0.9999963 0.9999997	^	122400.		0.580	0.993031	61.61	5.76	1.920E - 06
141200. 0.675 0.6644 0.987995 20.58 6.17 157737. 0.705 0.727 0.989668 21.55 6.47 167737. 0.755 0.989668 21.98 6.59 162737. 0.796 0.790 0.993017 22.51 6.75 167737. 0.885 0.7883 0.997392 22.51 6.97 17737. 0.9863 0.9997392 22.51 7.16 17737. 0.935 0.935 0.998783 24.61 7.38 182737. 0.993 0.998783 25.39 7.62 187737. 1.060 1.058 0.998831 26.27 7.88 192737. 1.130 1.137 0.998831 26.27 4.19 197737. 1.230 1.234 0.9988415 28.56 4.57 200447. 1.249 0.999863 29.40 8.98 201951. 1.343 0.999863 29.40 8.98 203526. 1.395 0.999963 29.40 8.98	යා	132100.	•	0.622	0.990729	19.49	5.97	2.219 - 06
152737. 0.705 0.727 0.9895266 21.55 6.47 157737. 0.760 0.755 0.989668 21.98 6.59 162737. 0.795 0.790 0.993017 22.51 6.59 167737. 0.885 0.796 0.997392 22.51 6.97 17737. 0.935 0.936 0.998783 24.61 7.38 182737. 0.995 0.993 0.998783 25.39 7.62 187737. 1.060 1.058 0.998831 26.27 7.88 192737. 1.130 1.137 0.998850 27.31 6.19 200447. 1.230 1.234 0.999466 29.40 8.82 201951. 1.343 0.999563 29.40 8.98 203526. 1.395 0.9999637 30.60 9.18	•	141200°	_	0.664	0.987996	20.58	6.17	2.549F-06
157737. 0.760 0.989668 21.98 6.59 162737. 0.755 0.790 0.993017 22.51 6.75 167737. 0.835 0.993017 22.51 6.75 17737. 0.885 0.936 0.99993 24.61 7.36 17737. 0.935 0.998783 25.39 7.62 187737. 1.060 1.058 0.998831 26.27 7.88 187737. 1.130 1.137 0.998415 28.56 8.19 197737. 1.230 1.234 0.998415 28.56 8.98 200447. 1.240 1.343 0.999563 29.40 8.98 201951. 1.340 1.343 0.999563 29.40 8.98 203526. 1.395 0.999997 30.60 9.18	2	152737.		0.727	0.985266	21.55	6.47	3.0995-06
162737. 0.755 0.790 0.993817 22.51 6.75 167737. 0.885 0.883 0.997392 23.22 6.97 172737. 0.985 0.936 0.996916 23.86 7.16 17737. 0.935 0.936 0.998783 24.61 7.38 17737. 0.995 0.998783 25.39 7.62 187737. 1.060 1.058 0.998831 26.27 7.88 192737. 1.130 1.137 0.998415 28.56 8.19 200447. 1.230 1.234 0.999466 29.40 8.98 201951. 1.340 1.343 0.999563 29.44 8.98 201951. 1.395 1.295 0.999997 30.60 9.18	=	157737.	-0	0.755	0.989668	21.98	6.59	3.6125-06
167737. 0.835 0.997392 23.22 6.97 172737. 0.885 0.936 0.936 0.99933 24.61 7.38 17737. 0.935 0.936 0.998783 24.61 7.38 182737. 0.995 0.99833 24.61 7.38 187737. 1.060 1.058 0.998831 26.27 7.88 192737. 1.130 1.137 0.998415 28.56 8.19 200447. 1.255 1.299 0.999466 29.40 8.98 201951. 1.340 1.343 0.999563 29.94 8.98 203526. 1.395 0.999997 30.60 9.18	12	162737.	LIP.	0.790	0.993017	22.51	6.15	4.0555-06
172737. 0.885 0.883 0.999916 23.86 7.16 17737. 0.935 0.936 0.998783 24.61 7.38 182737. 0.995 0.998783 25.39 7.62 187737. 1.060 1.058 0.998831 26.27 7.88 192737. 1.130 1.137 0.998415 28.56 8.19 200447. 1.295 1.299 0.999466 29.40 8.98 201951. 1.343 1.343 0.999563 29.94 8.98 203526. 1.395 1.295 0.999997 30.60 9.18	13	167737.	*	0.839	0.997392	23.22	16.9	4.67% - 06
17737. 0.935 0.936 0.99933 24.61 7.38 182737. 0.995 0.998783 25.39 7.62 187737. 1.060 1.058 0.998631 26.27 7.88 192737. 1.130 1.137 0.998350 27.31 8.19 197737. 1.230 1.234 0.998415 28.56 8.57 200447. 1.299 0.999466 29.40 8.98 201951. 1.340 1.343 0.999563 29.94 8.98 203526. 1.395 0.999997 30.60 9.18	4	172737.	-	·).883	916566*6	23.86	7.16	5.00vF-06
182737. 0.995 0.998783 25.39 7.62 187737. 1.060 1.058 0.998631 26.27 7.88 192737. 1.130 1.137 0.998450 27.31 8.19 197737. 1.230 1.234 0.998415 28.56 8.57 200447. 1.299 0.999466 29.40 8.98 201951. 1.340 1.343 0.999563 29.94 8.98 203526. 1.395 1.295 0.999997 30.60 9.18	2	177737.		0.936	0.999933	24.61	7,38	5.5895 - 06
187737. 1.060 1.058 0.998631 26.27 7.88 192737. 1.130 1.137 0.998350 27.31 H.19 197737. 1.230 1.234 0.998415 28.56 8.57 200447. 1.299 0.999466 29.40 8.98 201951. 1.340 1.343 0.999563 29.94 8.98 203526. 1.395 1.295 0.999997 30.60 9.18	91	182737.		0.993	0.998783	25.39	7.62	6.4295-06
192737. 1.130 1.137 0.998350 27.31 6.19 197737. 1.230 1.234 0.998415 28.56 3.57 200447. 1.249 0.999466 29.40 3.82 201951. 1.343 0.999563 29.94 8.98 203526. 1.395 0.999997 30.60 9.18	17	187737.	•	1.058	0.998631	26.27	7.88	7.509F - U6
197737. 1.230 1.234 0.998415 28.56 3.57 200447. 1.255 1.299 0.999466 29.40 3.82 201951. 1.343 0.999563 29.94 8.98 203526. 1.395 0.999397 30.60 9.18	8	192737.	m	1.137	0.998350	27.31	H, 19	9.097F-06
200447. 1.255 1.299 0.999466 29.40 3.82 201951. 1.343 0.999563 29.94 8.48 203526. 1.395 0.999397 30.60 9.18	19	197737.	m	1.234	6.998415	28.56	9.57	1.1746-05
201951. 1.340 1.343 0.999563 29.94 8.98 203526. 1.395 1.395 0.999397 30.60 9.18	20	200447.	u	1.299	9946660	29.40	3.82	1-402F-05
• 1.395 1.395 0.999397 30.60 9.18 1.	21	201951.		1.343	0.999563	29.94	8.58	1.5675-05
	22	203526.	Ç	1.395	1666660	30.60	9.18	1.8555-05

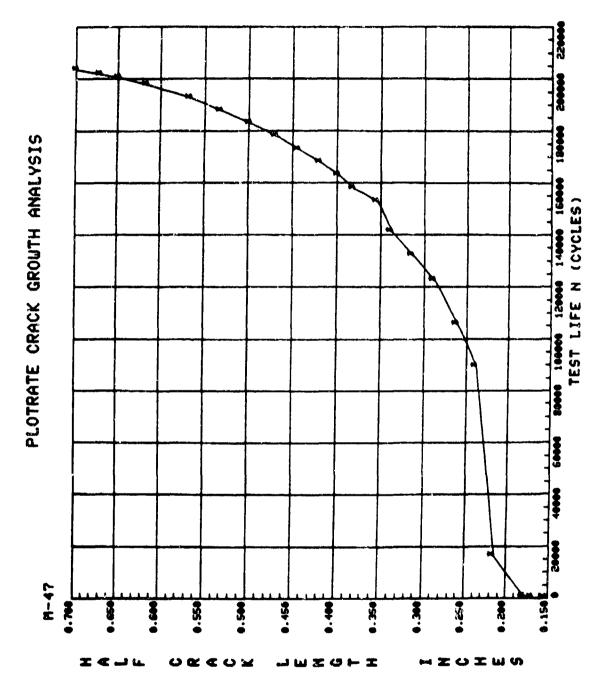


Figure 61. Crack growth curve for test M-47.

TABLE 60. DATA TABULATION FOR TEST M-48

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CCT SPECIMEN	ec.	0.250 IN.	N= 6.000 IN.	AN = 0.0 IN.	!		
=7 [#d		# X 9% d		TEST FREO= 6.00	00 н2.		
ENVIOUNMENT CONDITION:	NULLIUNCO	: AMBIENT AIP					
· CZ	CYCLES	A (MEA SURED)	A(REGRESSION)	MULT. CORR. COEFF	X-M-X	DELTA K	0 A 0
 (- ;	0.315	0.314	0.985385	28.13	24.0	7.768
~ (400	0.345	0.341	0.941692	29.33	8.80	2.489
~ .	500	0.350	0.350	0.962177	29.70	8.91	1.776
.	Sub)	0.440	0.437	0.977139	33.24	9.97	2.081
٠,	5000	0.520	0.529	0.990948	36.63	10.99	2.872
.	6(ii).	0.590	0.589	0.997955	38.71	11.61	3.612
_ ,	1000	0.665	0.667	0.997979	41.26	12.38	4.668
ac. (7500.	0.765	0.713	0.995239	42.69	12,81	5. 7816
o ;	8000	0.170	Ū. 769	0.998356	14.44	13.32	6.917
= :	9500	0.835	0.840	0.999481	46.50	13.95	8.440
(9000	0.935	0.933	0.996634	49.13	14.74	1.0726
71	9250	0.985	0.986	1768660	50.60	15.18	1. 2546
<u>~</u> :	4500	1.045	1.056	0.994516	52.32	15.70	1.555
.	9750	1.125	1-121	0.995301	54.21	16.26	1.997
<u>.</u>	10001	1.215	1.729	0.997046	57.00	17.10	2.6466
£) (10200	1.335	1.342	0.998316	59.88	17.96	3.4016
/ 1	10350	1.455	1.455	9666660	67.68	3 0 0	30000

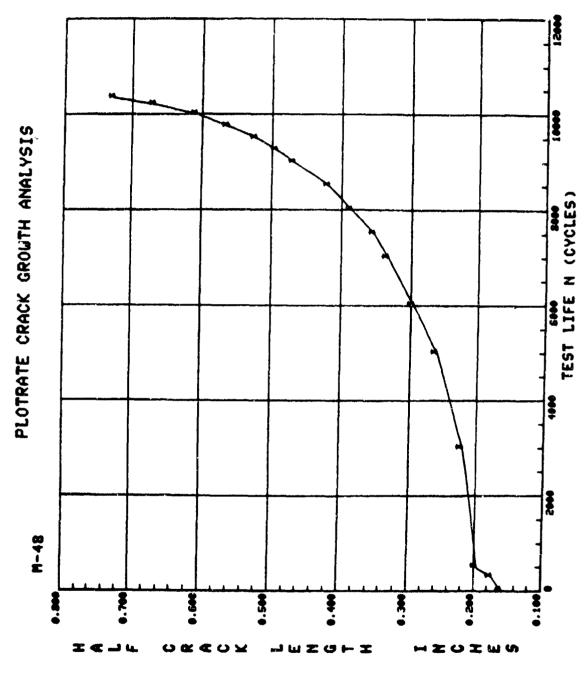


Figure 62. Crack growth curve for test M-48.

DATA TABULATION FOR THST M-49 TABLE 61.

DELTA K 9.77 9.85 16.11 16.81 17.53 10.53 11.37 12.23 12.80 13.47 18.14 19.11 19.71 19.71 20.31 22.36 22.68 14.59 15.16 15.67 3.60 24.12 13.96 14.07 15.04 16.24 17.47 18.28 19.24 19.99 20.84 21.65 22.38 24.02 25.04 25.04 26.61 27.30 28.16 29.02 29.59 31.26 32.40 34.45 23.02 TEST FREG* 6.00 HZ MULT. CORR. COEFF 0.997162 0.998522 0.997511 0.998045 0.997407 0.999366 0.998862 0.998935 0.998414 0.998626 0.494595 0.999588 0.999255 0.999309 0.998529 0.499244 0.498804 998896 0.998946 0.999420 0.998429 0.999514 0.998022 1,997441 0.997297 AN= 0.0 A (REGRESSION) W= 6.000 IN. 0.309 0.314 0.359 0.417 0.527 0.583 0.628 0.681 0.825 1.083 1.202 1.314 1.389 .448 1.649 0.482 13.733 1.031 1.541 11.741 AMBIERT AIP A I FFA SUREDI 0.310 0.310 0.365 0.415 0.530 0.530 0.680 0.730 0.780 0.830 1.025 .385 .650 0.850 .155 .320 . 720 . 445 9= .3.250 IN. =X VH d CONDITION: 23511. 23887. 7100. 9690. 13661. 15794. 17270. 22610. 9125. 65-1 50. 4057. 2598. 20279. 21248. 21663. 21941. 22956. 23323. 9797. 20729. 22329. SPECIMEN 40.: SPECIMEN ENVIPONMENT ~ ~ 4 × 4 × 4 ニンに大の

2.248-05 2.248-05 2.248-05 3.206-05 3.468-05 4.638-05 5.196-05 5.846-05 5.846-05 6.458-05

8.158E-06 1.154E-05 1.494E-05

9.175E-05 1.080E-04 1.214E-04

1.593E-04 1.732E-04

1.3566-04

2.064E-04 2.361E-04 2.762E-04

25.27

36.11 37.24 38.72

2.057

2.055

.. 825

TABLE 61. DATA TABULATION FOR TEST M-49 (CONCL)

41.06 42.72 44.32 45.79 47.33 53.90 56.36 57.91 52.48 50.80 K-MAX TEST FREO= 6.00 HZ. MULT. CJRR. COEFF 0.998946 0.999796 0.998883 0.989092 0.990037 0.399780 0.999750 0.999668 0.998634 0.998846 11566600 AN= 0.0 A ! REGRESSICN! W= 6.000 IN. 2.160 2.244 2.373 2.605 2.605 2.828 3.063 3.151 3.248 3.386 3.523 AMRIENT AIR A (MEA SLKED) 2.160 2.245 2.370 0.250 IN. P MA X= ENVIRONMENT CONDITION: CYCLES 24531. 25390. 64-4 24847. 25107. 25209. 25302. 25457. 24668. 25570. 25602. SPECIALY 40.: SPECIMEN "TING

04/0N 3.1246-04 3.4375-04 4.0446-04 4.6386-04 5.2656-04

5.936F-04

28.01 29.74 29.91 31.02 32.06 33.13 34.26 35.56 35.73

6.887F-04 8.025F-04 9.247E-04 1.052F-03 1.437E-03 2.311F-03

39.45 40.54 42.32 44.20

63.14

3.658

3.660

25633.

25665,

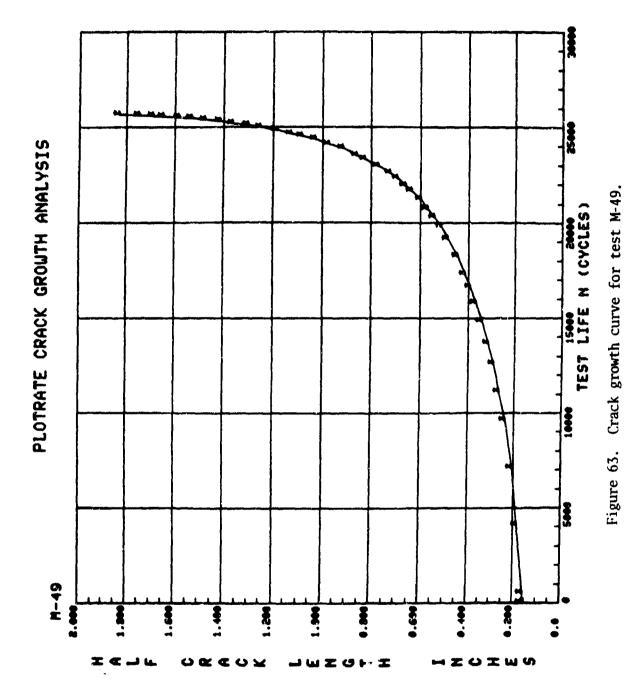


TABLE 62. DATA TABULATION FOR TEST M-50

ON.	CYCLES	A (MEAS JR.ED)	A (REGRESSION)	MULT. CORR. CCEFF	K-YAX	DELTA K	MC/40
p=0	.	O.21C	0.310	0.998107	27.46		7.076
~	200	0.330	(1, 3,23	0.947	, , ,		
•	1000	275	275 0	717776	****	17.7	3.431t-05
		77.00	11.0	411016.0	3C.85	71.59	9.15ck-05
* •	1,000	0.473	0.435	6.972ceū	33.19	23.23	1.4478-64
^	1430.	014.0	0.463	0.99C2uE	34.98	7.4.4%	20-3880-7
•	1596.	0.540	0.540	0.567770	37.30	7.4.1	7 46.36.04
_	1690.	6.533	404	713677		11.01	FOL 38 CO* 7
w	1750.		1 to	2007-00 O	77.6	14.17	3.1951-24
. 0	10.50			つ、ピートト・ロ	12.04	75-57	3.5545-04
•	1356	0700	363.0	0.996.710	42.23	94.67	3.9.06-04
) i	(2) (2) (3)	0.745	0.742	0.996153	43.57	30.50	4-6-66-04
1	1930.	0.1.0	0. 759	9523540	55.55	21.44	4.498F-34
12	1980.	0.040	848.0	3538660	45.71	02.25	4 4356-04
13	2025.	0.40	£05°0	0.5 49 16.	1.7.94	000	10-100 P
14	2065.	0.476	6.972		200	30.00	**************************************
15	.100°	080	100	10 14 40 4 4	7.0	17.00	0.814t-U4
1.	2120		1:031	だけいのかから	66.14	26.39	1-018E-G5
2 -	0000	1010	1.0%	0936660	53.64	37.54	1.1916-03
	.120.	41 ·	1.147	719665-0	24.50	53.43	1.327E-03
61.	.102.	J. I.	1.195	0.500.10	55.96	34.10	1.4695-03
7 0	-180-	ι. (Γ.) •	562°1	0.929158	57.13	44.47	1.6265-63
20	* 1.61.7	ن در ا در در ا	1.256	20L806*U	52.45	16.04	1-3445-63
12	2210.	1.24°	1,339	9524660	5.5.60	* 1.8£	1.9408-0
22	2222	C 3 C •	1.379	5.597.00	60.76	42.55	2-1341-63
63	27.30.	51+-1	1.420	0.9%4565	51.63	43.75	2.56.36-03
57	. 240.	1.470	1.451	C 30 64 6 0	65.40) (r) 4	10000
ر. بر	2256.	10 0 0 E	1.630			70007	20-240000
26	2260.		4	107816.0	20.50	11.64	5.655£-63
23	0200	4 4 F		10000000	01.10	42.14	0.597f-63
	• 0 1 1	n 0 0 0	1.263	£ 25 556 D	72.67	5 C. 6 7	1.4146-0.

ENVIRONMENT CONDITION: AMBIENT AIR

TEST FREG= 6.00 HZ.

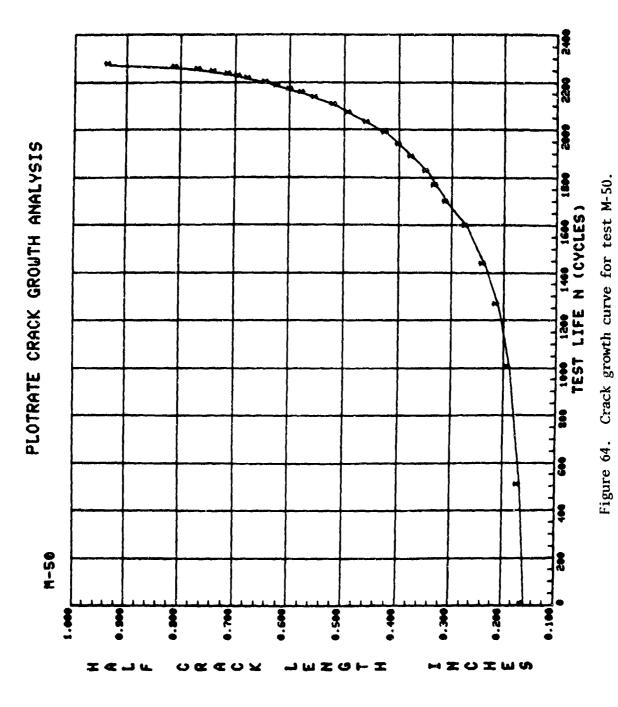
AY= C.U

W= 6.000 IN.

f= f.750 IN.

CCT SPECIMEN

SPECIMEN NO.:



PECIMEN YOUR MANAGE

CYCLES A(**EAEUR.D.) A(REGRESSION) **ULT. CORR. COEFF **LHAX DELITA K DAADH CO. 993104	C But	0.150 IV. PMAX=	W= 6.000 IN. R= 0.0	AN= 0.0 IN. TEST FREQ=	6.00 HZ.		
ACURLD AIREGRESSIONI MULT. CDRR. CDEFF K-MAX DELIA K 0.9093106 0.907506 0.907206 0.907206 0.907206 0.907206 0.907206 0.907206 0.907207 0.907917 0.907917 0.907917 0.907917 0.907917 0.907917 0.907917 0.907917 0.907920 0.9	÷	AMPILAT					•
375 0.306 0.993106 5.55 5.59 .375 0.347 0.995866 5.91 5.91 .445 0.444 0.997816 6.37 6.70 .445 0.496 0.998289 7.04 7.04 .445 0.490 0.998289 7.04 7.04 .455 0.490 0.998389 7.04 7.04 .455 0.490 0.998389 7.04 7.04 .455 0.628 0.99838 8.92 8.92 .455 0.628 0.99838 8.92 8.92 .756 0.776 0.999556 8.92 8.92 .757 0.776 0.999556 8.92 8.92 .756 0.776 0.999556 8.92 8.92 .757 0.270 0.999556 8.92 8.92 .757 0.289 0.996474 9.96 9.91 .757 1.081 10.33 10.33 .757 1.046		₹	A (REGRESSION)	CORR.	K-MAX	DELTA K	DA/DM
355 0.347 0.995 E66 5.91 5.91 6.37 7.04			0.306	0.993106	5.55	5.55	2.108E-06
2.7.2 0.401 0.997206 6.37 6.37 .445 0.446 0.997217 6.70 7.04 .445 0.490 0.997217 7.04 7.04 .445 0.490 0.998229 7.46 7.46 .445 0.628 0.998229 7.46 7.46 .445 0.628 0.998229 7.46 7.46 .445 0.628 0.998528 8.36 8.36 .445 0.722 0.999558 8.92 8.92 .446 0.746 0.999558 8.92 8.92 .447 0.748 0.99526 8.92 9.91 .447 0.948 0.996474 9.96 9.96 .448 0.981456 10.45 10.45 10.45 .449 0.984476 10.81 10.45 10.45 .440 1.046 0.996474 9.96 9.96 .440 1.046 0.996447 11.42 11.42 .440 <td></td> <td></td> <td>0.347</td> <td>0.995886</td> <td>5.91</td> <td>5.91</td> <td>2-627E-06</td>			0.347	0.995886	5.91	5.91	2-627E-06
4.45 0.444 0.998289 7.04 7.04 4.45 0.490 0.998289 7.04 7.04 4.45 0.490 0.998289 7.04 7.04 4.55 0.668 0.998289 7.04 7.04 4.55 0.668 0.99858 8.36 8.36 7.5 0.726 0.99958 8.92 8.92 7.5 0.726 0.99958 8.92 8.92 7.5 0.726 0.99958 8.92 8.92 7.0 0.776 0.99958 8.92 8.92 7.0 0.776 0.99973 9.22 9.22 7.0 0.746 0.99674 9.96 9.96 7.0 0.957 0.986402 10.45 10.45 7.0 1.046 0.986402 10.45 10.45 7.0 1.046 0.986402 10.45 10.45 7.0 1.046 0.966402 10.45 10.45 7.0 1		•	0.401	0.997268	6.37	6.37	3-3306-06
445 0.490 0.998289 7.04 7.04 545 0.628 0.998525 7.46 7.45 545 0.628 0.99958 8.36 8.43 754 0.728 0.99958 8.92 8.92 755 0.776 0.99958 8.92 8.92 755 0.776 0.99958 8.92 8.92 756 0.827 0.99958 8.92 8.92 757 0.889 0.991230 9.22 9.22 855 0.889 0.991330 9.58 8.92 855 0.997 0.997 9.91 9.91 855 0.997 0.996 9.91 9.91 855 0.997 0.996 9.91 9.91 855 0.997 0.996 9.91 9.91 855 0.997 0.996 9.91 10.42 855 0.996 0.996 9.91 10.91 855 0.996 0.996		•	0.444	116166.0	6.10	9.10	3.784E-06
545 0.996525 746 7.67 555 0.668 0.998978 7.67 7.67 555 0.668 0.998978 7.67 7.67 725 0.99958 8.36 8.36 725 0.776 0.999516 8.92 8.92 7.5 0.776 0.999516 8.92 8.92 8.5 0.627 0.999516 8.92 8.92 8.5 0.627 0.996730 9.22 9.22 8.5 0.948 0.997738 9.91 9.91 8.7 0.967738 9.91 9.91 9.91 8.7 0.967738 9.91 9.91 9.91 8.7 0.967738 9.91 9.91 9.91 8.7 0.967738 0.96746 9.96 9.96 8.7 0.96732 10.45 10.45 10.45 8.6 1.234 0.96732 10.45 10.45 8.6 1.236 0.994367 12.14		•	0.490	0.998289	7.04	7.04	4-383E-06
4.65 0.668 0.998978 7.87 7.87 7.87 7.87 7.87 7.87 7.87 7.87 7.87 7.87 7.87 7.83 8.36 7 7.5 0.564 0.999556 6.63 6.63 6.63 7 7 7.5 0.276 0.999556 6.63 6.93 7 7 7 7 7 7 7 7 7 7 7 7 7 8 9			0.547	0.996525	7.46	7.46	5-0816-06
-5.5 0.6664 0.99956 6.63 6.36 7 -7.5 0.720 0.99956 6.63 6.63 6.63 7 -7.5 0.776 0.99956 6.63 6.63 6.63 7 -7.5 0.927 0.991230 9.22 9.22 9 9 -8.5 0.948 0.991230 9.22 9 </td <td></td> <td></td> <td>0.608</td> <td>0.998978</td> <td>7.87</td> <td>7.67</td> <td></td>			0.608	0.998978	7.87	7.67	
7.56 0.722 0.999556 6.63 8.63 7 7.0 0.776 0.999516 8.92 8.92 8 8.55 0.827 0.991230 9.22 9.22 9 8.55 0.869 0.991230 9.22 9 9 9 8.55 0.948 0.99032 0.991 9.91 9.91 1 <td></td> <td></td> <td>0.684</td> <td>0.999588</td> <td>8 . 36</td> <td>8.36</td> <td>7.0446-06</td>			0.684	0.999588	8 . 36	8.36	7.0446-06
7.0 0.776 0.999516 8.92 8.92 8.92 8.92 9.22 9.91 2 2 2 2 2 2 2 2 3 2 2 3 3 3 3		•	0.729	0.999556	6.63	6.63	7-7235-06
6.5 0.827 0.991230 9.22 9.91 2 2 2		•	0.776	0.999516	8.92	8.92	8.307E-06
0.05/5 0.869 0.997303 9.58 9.58 0.975 0.948 0.987738 9.91 9.91 0.975 0.957 0.98474 9.96 9.96 1.015 1.026 0.983456 10.33 10.33 1.016 1.046 0.986402 10.45 10.45 1.016 1.046 0.99032 10.45 10.45 1.165 1.149 0.99032 10.45 10.45 1.245 1.234 0.990769 11.42 2 1.245 1.234 0.990769 11.42 2 1.256 1.306 0.994367 12.17 12.17 1.450 1.479 0.994367 12.17 12.17 1.450 1.479 0.994367 12.17 12.17 1.555 1.569 0.994367 13.96 14.46 1.715 1.745 0.994367 13.96 14.46 1.555 1.569 0.997387 13.96 14.46 <		•	0.827	0.991230	9.22	9.22	9-6556-06
0.948 0.96474 9.91 9.91 1 0.975 0.957 0.96474 9.96 9.96 1 1.015 0.96474 9.96 9.96 1 1 1.015 1.026 0.96402 10.33 1		•	0.869	0.990303	9.58	9.58	1.047E-05
0.975 0.96474 9.96 9.96 1 1.015 1.026 0.983456 10.33 10.33 1 1.016 1.046 0.96402 10.45 1 1 1.165 1.180 1.081 1 1 1 1.245 1.234 0.990769 11.42 1 2 1.255 1.305 0.991370 11.80 11.80 2 1.470 0.993830 12.17 12.17 2 1.470 0.993830 12.66 12.66 3 1.715 1.745 0.990821 13.10 13.10 4 1.715 1.745 0.990822 13.96 14.69 5 1.555 1.695 0.978921 13.96 14.69 5 2.155 1.695 0.978921 15.36 6 2.205 0.978921 16.23 16.23 16.23 2.165 2.205 0.974047 15.36 16.23 16.23 2.165 2.253 0.775431 16.98 16.98 16.98		•	0.948	0.987738	16.6	9.91	1.2336-05
1.015 1.026 0.983456 10.33 10.33 1.026 1.046 0.966402 10.45 10.45 1.105 1.016 0.99032 10.61 1 1.15 0.99032 10.81 10.81 1 1.245 1.234 0.990769 11.42 11.42 2 1.255 1.305 0.991370 11.80 11.80 2 1.470 0.994367 12.17 12.17 2 1.470 0.994367 12.17 12.17 2 1.556 0.990231 13.10 13.10 4 1.556 0.990321 13.26 13.96 5 1.715 1.745 0.997804 14.69 14.69 5 2.15 2.031 0.977904 15.36 16.23 16.23 2.165 2.205 0.874120 16.98 16.98 16.98 2.165 2.253 0.775431 16.98 16.98 16.98		•	0.957	0.986474	96.6	96.6	1.2136-05
1.000		•	1.026	0.983456	10.33	10.33	1-380E-05
1-105		•	1.046	0.966432	10.45	10.45	1.480E-05
1.155 1.149 0.967170 10.99 1.245 1.234 0.990769 11.42 11.42 1.255 1.360 0.991370 11.80 11.80 1.470 0.994367 12.17 12.17 1.470 0.993830 12.66 12.66 1.555 1.569 0.990231 13.10 13.10 1.745 0.978872 13.96 14.69 1.555 1.695 0.975904 14.69 14.69 2.155 2.205 0.874120 16.23 16.23 2.155 2.253 0.775431 16.98 16.98		٦.	1.115	0.990322	10.81	10.81	1-6115-05
1.245 1.234 0.990769 11.42 11.42 1.255 1.305 0.991370 11.80 11.80 1.400 1.360 0.994367 12.17 12.17 1.470 0.992830 12.66 12.66 1.555 1.569 0.990231 13.10 13.10 1.715 1.745 0.978872 13.96 14.69 1.555 1.695 0.975904 14.69 14.69 2.155 2.205 0.974047 15.36 15.36 2.155 2.205 0.874120 16.23 16.23 2.155 2.205 0.775431 16.98 16.98		7	1.149	0.267170	10.99	10.99	1.879E-05
1.255 1.305 0.991370 11.80 11.80 11.80 11.80 11.80 11.400 1.350 0.994367 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.17 12.16 1.559 0.990231 13.10 13	71960.	٠,	1.234	0.990769	11.42	11.42	2-186E-05
1.400 1.390 0.994367 12.17 12.17 1.470 0.993830 12.66 12.66 1.555 1.569 0.990231 13.10 13.10 1.715 1.745 0.978872 13.96 13.96 1.555 1.695 0.975904 14.69 14.69 2.155 2.205 0.975904 15.36 15.36 2.155 2.205 0.874120 16.23 16.23 2.165 7.353 0.775431 16.98 16.96	_	•	1.30%	0.991370	11.80	11.80	2.622E-05
1.470 1.479 0.993830 12.66 12.66 1.555 1.569 0.990231 13.10 13.10 1.715 1.745 0.978872 13.96 13.96 1.555 1.695 0.975904 14.69 14.69 2.105 2.205 0.9754120 16.23 16.23 2.165 7.353 0.775431 16.98 16.98		•	1.380	0.994367	12-17	12.17	2.938E-05
1.555 1.569 0.990231 13.10 13.10 1.715 1.745 0.978872 13.96 13.96 1.555 1.695 0.975904 14.69 14.69 2.155 2.031 0.975904 15.36 15.36 2.155 2.205 0.874120 16.23 16.23 2.165 7.353 0.775431 16.98 16.96		•	1.479	0.993830	12.66	12.66	3.626E-05
1.715 1.745 0.978872 13.96 13.96 1.585 1.895 0.975904 14.69 14.69 2.105 2.031 0.975904 15.36 15.36 2.115 2.205 0.874120 16.23 16.23 2.165 7.353 0.775431 16.96 16.96		11.	1.569	0.990231	13.10	13.10	4-571F-05
1.555 1.695 2.105 2.031 0.975904 14.69 2.105 2.205 0.874120 16.23 16.23 2.115 2.205 0.874120 16.23 16.23 2.165 7.253 0.775431 16.98 16.98		``	1.745	0.978872	13.96	13.96	5-111F-05
-155 2.031 6.944047 15.36 15.36 -115 2.205 0.874120 16.23 16.23 -165 7.253 0.775431 16.98 16.98		•	1.695	0.975904	14.69	14.69	5-234E-05
.115 2.205 0.874120 16.23 16.23 16.23 .16.23 .16.23 .16.23		•	2.031	0.944047	15.36	15,36	6.3435-05
.165 7.253 0.775431 16.98 16.98		-1	2,205	0.874125	16.23	16.23	8-6455-09
		•	7.353	0.775431	16.98	16.98	1-799E-0

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TABLE 63, DATA TABULATION FOR THIST M-51 (CONCL.)

SPECINEN NO. : - 4-6	~ ·					
CCT SPECIMEN	6= (.25(IN.	W= 6.000 lk.	2	AN= 0.0 IN.	. KI	
HZIZG	PMAX=		R= 0.0	TESI	FRE0=	TEST FREQ= 6.00 HZ.
ENVIRONMENT CO	ENVIRONMENT CONDITION: AMSLENT AIR					,

DAZDN	8-447E-04	7-386E-04	8.3936-04	9.5296-04	1.293E-04	2.698E-03	5.662E-03	4.4 19E-113
DELTA K	17.72	18.82	19.31	19.89	22,55	22.46	22.62	24.98
K-MAX	77.77	18.82	19.31	19.89	22,55	22.46	22.62	24.98
MULT. CORR. CUEFF	12C00000	1230660	0.982663	0.974332	0.735525	0.764142	0.984181	675956*0
A (REGRESSION)	2.474	2.443 7.443	2,762	2,582	3.299	3.207	3,369	3.625
A (MERSURED)	2.3:0	7.47.7		()) ()) ())	3,135	3.76.3	3.245	3.625
		= 560C .						
NC.	58	0:	16	4 (1)	34	, .c.	36	57

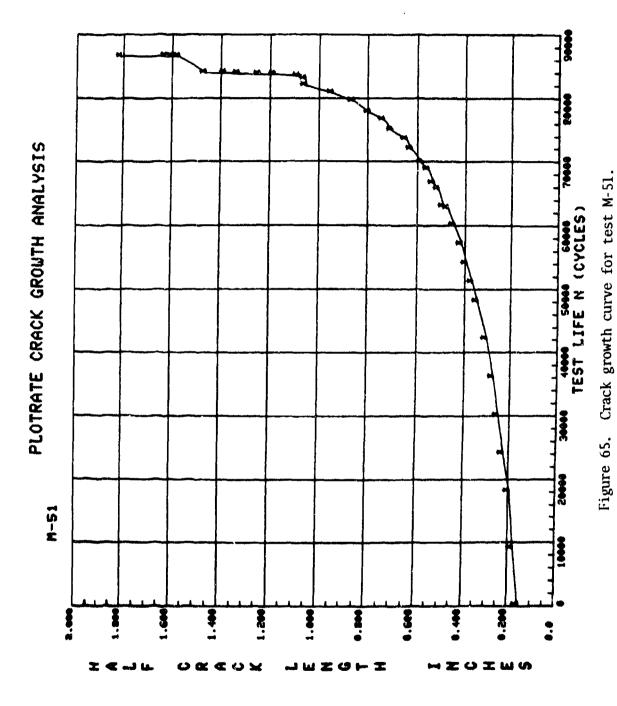


TABLE 64. DATA TABULATION FOR TEST M-52

SPECIMEN NO. : M-12

CCT SPECIMEN		9= 0.150 IV.	W= 6.000 IN.	AN= G.C IN.			
PMINE		FYAX	R= C.0	TEST FRED= 5.00 HZ	.3C HZ.		
ENVIRONMEN	ENVIRONMENT CONDITION:	I ANSIEME EIS					
.Ox	CYCLES	A LME ASURSO)	A(REGRESSION)	MULT. COKR. CUEFF	X-MAX	DELTA K	OA/DN
-1	° 0	ن•٤٢٥	0.300	1.00000	13.75	13.75	1.322E-05
2	1500.	2:6.0	0.246	3773450	14.78	14.78	2.035E-05
m	2604.	೧೯೩೦	0.401	0.99aloT	15.92	15.92	2.681E-05
4	3000	6.4.0	0.460	9255960	17.05	17.05	3.501E-05
ĸ	4400.	6.5.6	6.517	0.985620	19.10	18.10	4.767E-US
9	5200.	3.6.75	0.595	0.9cy75E	19.45	19.45	6.192£-u5
۷	£80c.	0.460	6.673	0.930264	20.73	20.13	8.144E-02
æ	6190.	0.740	5-722	6.955775	21.48	21.48	8.402E-05
3	. 7259	7.00°	0.016	693616-0	22.93	22.93	1.023E-04
10	2674.	054.0	0.843	0.977435	23.24	23.24	1.008E-04
-	1119.	ູ `6* ບ	5.8.0	C.952C64	24.58	24.59	1.201E-04
77	7148.	C. \$ 3.3	D. 935	0.950555	24.60	24.60	1.272E-04
~	7576.	ا• نڊر	990°-1	2542560	19.97	26.67	1.519E-04
71	1440.	1.125	1.50°I	0.944265	25.79	56,79	1.676E-04
5	79.73.	1.175	1.164	Ů.692∂6Ů	27.66	27.66	2-157E-04
91	£201.	15:20	1.36?	0.752570	30.43	30.43	4.206E-04
11	6217.	4 1 1 m	1.451	0.572259	31.29	31.29	9.5495-04
2	6229	1.4°L	1.474	1185.6.0	31.58	31.58	7.645E-03
67	£233	ا و و ن	1.584	C.\$9347±	35.93	32.93	1.2246-02
20	673°	1.725	1.722	0.994653	34.62	34.62	1-666E-02

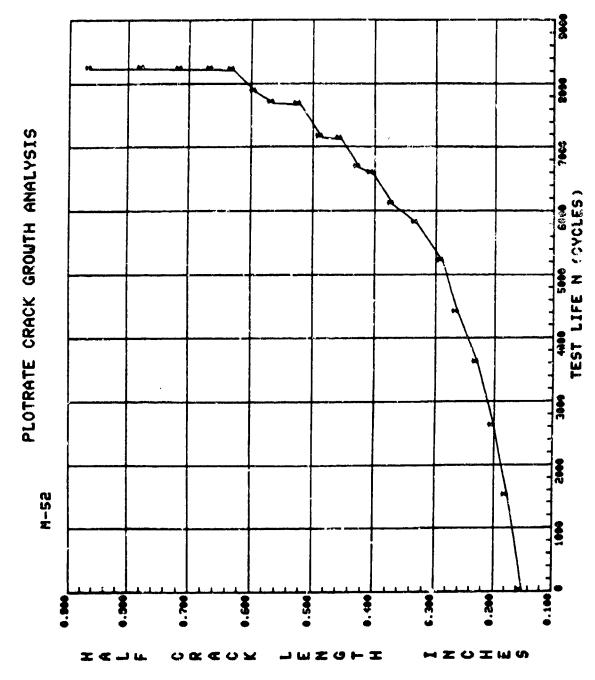


Figure 66. Crack growth curve tor test M-52.

TABLE 65. DATA 1 JUATION FOR TEST M-53

SPECIMEN NG.: M-53

				1			
		1.MAX=		16.51 FX10= 6.	6.JO HZ.		
ENVIRONMENT	T CONDITION:	AMBIENT AIP					
MO.	CYCLES	A (MEASURED)	A (FEGRESSION)	MULT. COPR. CUEFF	X-M-X	DELTA K	NG/Y'
 • ,	•	0.250	0.240	3.999865	14.4	3.73	4.1 +6t-0¢
2	0000	0.315	0.314	0.996536	٤9•٠,	3.97	3 -> JôE - 36
m	5500.	5,5	0.331	0.971417	5.16	4.05	3 - 02 0E - 05
4	•0009	0.240	85E*0	6.972914	5.EU	4. Jé	2.928E-u6
'n	•0006	0.340	0.344	7.476443	04.7	4.13	1-9156-06
-	15066.	0.276	C-267	6.999C22	60.4	4.26	1.750E-05
~	210015	0,385	3.35%	0.975170	43.0	4.37	2-110E-ú6
J)	27000.	0.415	0.433	0.452775	6.46	4,52	2.600E-36
•	32506.	0.420	C, 44:	0.977672	01.0	59.4	2.700c-06
0[36000.	525-0	0.465	C-954411	18.0	4.83	2.531t-ú6
	45000°	0.°10	0.504	14.543.45.	7.15	2.0c	3.0255-06
12	47500.	o.v.o	3.63.6	0.377186		5.17	3.29eE-0t
E -	53500.	52.50	0.573	0.952442	1.63	5.34	4 .4 UZ E-UC
*	57000.	0.540	0.602	0.963570	7.52	5,46	5.569E-ûé
S	5950	೧, ೬೦	0.631	6216660	0.02	5.61	6-1196-06
91	63000.	0.45	0.486	711174-0	5.33	ري دو دو	6.177E-56
17	£6000.	0.7.0	0.729	プロフかりの*C	5.64	6.04	7.196E-(16
8	£9300°	0.770	•	C.9481':		£ . Ž.	7-475-66
6	72000.	01:0	C. e1C	30.8985.0	9.12	6.35	7.475£-06
20	75000.	0°4°0	0.854	35 3655 *0	e. e. y	6.55	6.J06E-06
21	7.00°C	9:6:0	€36°°	2525550	4.66	t.1t	0 - 0 Cyt - 06
25	91600	0.546	096.0	9156660	64.4	6.93	9.613£-uo
23	\$4000°	0.50 - 1	1.01c	56966*Q	10.29	7.21	1.1016-05
52	£700C.	1.050	1.057	0.9971:1	10.66	7.43	1-1951-05
52	920000	1.153		ひょうかいり ひ	11.66	7.74	
56	930co.	1.260	10.00	9388250	11.52	10.0	1-3736-05
2.1	95820.	10.00	1.339	[885869]	, T	7	1.6116-05
				,	,	. 100	111

TABLE 65. DATA TABULATION FOR TEST M-53 (CONCL)

SPECIMEN NO.: M-53

FULL CANDITION: AMBIENT AIR ENVIRONMENT CUNDITION: AMBIENT AIR AND SPECIAL STATES STAT	CCT SPECIMEN	;	80, 9.250 IN.	#= 6.6CG IN.	AN= 0.0 IN.			
AMBIENT AIR AMBEASURCD A(REGRESSION) MULT. CORR. COEFF K-MAX DELTA K 1.590 1.590 1.590 1.470 1.463 0.993546 12.58 8.60 1.580 1.580 1.580 1.580 1.580 1.580 1.666 0.923463 12.70 8.89 1.70 1.951 0.923463 13.57 9.50 1.70 1.951 0.923019 14.57 10.23 2.070 2.169 0.95291 0.663147 16.29 11.69 2.325 2.229 0.663147 16.35 11.69 2.325 2.229 0.664541 16.35 11.69 2.5610 2.597 0.604021 16.69 11.69 2.610 2.610 2.610 3.159 0.995795 2.167 2.167 3.070 2.189 2.2197 0.995795 11.659 11.65	=NIWG		PMAX=			.00 HZ.		
CYCLES Affressurtp) Affression MULT. CORR. COEFF K-MAX Delta K 98500. 1.390 1.447 0.935646 12.50 9.75 98600. 1.515 1.463 0.923465 12.50 9.89 99600. 1.515 1.468 0.923463 12.70 9.89 101829. 1.515 1.666 0.923463 12.70 9.89 101829. 1.515 1.666 0.929463 13.57 9.49 101829. 1.705 1.654 0.929420 14.47 10.13 104625. 1.770 1.871 0.929420 14.47 10.13 104627. 1.705 1.871 0.929420 14.47 10.13 104647. 1.871 0.929420 14.47 10.13 107667. 2.169 0.929420 14.61 10.23 107667. 2.169 0.8932147 16.24 11.40 107977. 2.325 2.227 0.795427 12.70	ENVIRONMENT	CONDITION:	7					
1.290 1.447 0.93546 12.50 9.75 1.470 1.463 0.93346 12.58 8.60 1.515 1.463 0.923463 12.70 9.89 1.530 1.666 0.923463 12.70 9.89 1.705 1.654 0.920019 13.57 9.49 1.705 1.654 0.929420 14.47 10.13 1.540 1.871 0.929420 14.47 10.13 1.540 1.871 0.929420 14.47 10.23 1.540 1.871 0.917119 14.47 10.23 1.540 1.871 0.929420 14.61 11.23 2.070 2.169 0.8693147 16.29 11.40 2.305 2.217 0.6643147 16.29 11.69 2.305 2.229 0.6645641 16.59 11.69 2.570 0.923736 16.59 12.60 2.571 0.923736 19.12 12.60 2.610 2.750 0.990328 19.12 13.39 2.610 3.070 <th>NO.</th> <th>CYCLES</th> <th>A (MEASUR TO)</th> <th>A (REGRESSION)</th> <th>MULT. COKR. COEFF</th> <th>X-M-X</th> <th>DELTA K</th> <th>DAZDN</th>	NO.	CYCLES	A (MEASUR TO)	A (REGRESSION)	MULT. COKR. COEFF	X-M-X	DELTA K	DAZDN
1.463 0.935446 12.58 8.80 1.515 1.468 0.923463 12.70 9.89 1.530 1.666 0.940569 13.57 9.50 1.705 1.654 0.929430 13.57 9.49 1.706 1.871 0.929430 14.47 10.13 1.640 1.871 0.929430 14.61 10.23 1.940 1.871 0.91719 14.61 10.23 2.070 2.169 0.852147 14.61 10.23 2.165 2.217 0.853147 16.29 11.44 2.355 2.229 0.8653147 16.35 11.44 2.325 0.8653147 16.35 11.44 2.325 0.8653147 16.35 11.69 2.475 2.571 0.765427 18.14 12.76 2.570 0.965427 18.14 12.80 2.570 0.990328 19.12 13.39 2.610 2.619 0.994596 19.52 13.67 3.250 3.159 0.9947595 21.67 15	59	98500.	1.590	1-447	0.935646	12.50	9.75	2.362E-05
1.515 1.468 0.923463 12.70 9.89 1.530 1.666 0.940869 13.57 9.50 1.705 1.654 0.920019 15.56 9.49 1.706 1.871 0.929420 14.47 10.13 1.660 1.871 0.929420 14.47 10.13 1.670 1.871 0.929420 14.47 10.20 2.070 2.169 0.9859237 14.61 10.23 2.165 0.8653147 16.29 11.69 2.355 2.229 0.8653147 16.35 11.69 2.475 0.8653147 16.35 11.69 2.475 0.8653147 16.35 11.69 2.475 0.865641 16.35 11.69 2.575 0.865641 16.35 12.66 2.575 0.9756427 18.14 12.66 2.575 2.750 0.990328 19.12 13.69 2.610 2.610 2.616 0.990328 19.12 13.67 2.610 2.610 0.990328 19.12 <t< td=""><td>30</td><td>98881.</td><td>1.470</td><td>1.463</td><td>0.435446</td><td>12.58</td><td>8.50</td><td>2.698E-05</td></t<>	30	98881.	1.470	1.463	0.435446	12.58	8.50	2.698E-05
1.530 1.666 0.9940869 13.57 9.50 1.705 1.654 0.929420 14.47 10.13 1.706 1.871 0.929420 14.47 10.13 1.650 1.871 0.917119 14.61 10.20 1.650 1.871 0.859237 14.61 10.20 2.070 2.169 0.859247 14.61 10.20 2.165 0.853147 16.29 11.40 2.305 2.229 0.8653147 16.39 11.40 2.305 2.229 0.8653147 16.35 11.40 2.406 0.8653147 16.35 11.69 2.406 0.8653147 16.35 11.69 2.570 0.86641 16.36 12.66 2.570 0.996321 16.29 12.66 2.610 2.610 2.610 19.12 13.67 2.610 2.610 2.619 19.12 15.39 2.610 2.610 2.610 0.99936 19.12 15.51 3.250 3.159 0.9995767 21.3	31	.00066	1.515	1.498	0.923463	12.70	9.89	2.503E-05
1.705 1.564 0.929019 13.56 9.49 1.770 1.951 0.91719 14.67 10.15 1.960 1.871 0.917119 14.67 10.20 1.0.20 2.070 2.169 0.859337 16.35 11.40 2.325 2.229 0.845641 16.35 11.40 2.475 2.575 0.8645641 16.35 11.46 2.580 2.729 0.8645641 16.35 11.46 2.580 2.729 0.895346 19.12 13.39 2.610 2.610 2.610 2.610 3.046 0.997595 2.089 15.39 15.51 3.200 3.159 0.997597 21.67 15.51	32	101829.	1.530	1.666	0.940369	13.57	9.50	3.1096-05
1.770 1.851 0.929420 14.47 10.13 1.640 1.871 0.917119 14.57 10.20 1.960 1.871 0.917119 14.61 10.20 1.960 1.871 0.889337 14.61 10.23 2.070 2.169 0.872125 16.04 11.23 2.305 2.277 0.865147 16.29 11.40 2.325 2.277 0.86541 16.35 11.40 2.425 2.297 0.86641 16.36 11.69 2.425 2.57 0.795427 18.14 12.70 2.570 2.57 0.9953736 14.62 13.39 2.610 2.619 0.995376 19.12 13.67 2.610 3.046 0.997595 20.69 14.62 3.250 3.159 0.996757 21.87 15.51	33	107000.	1.705	1.654	0.920019	13.56	64.6	3-260E-05
1.540 1.871 0.917119 14.57 10.20 1.966 1.674 0.8893.7 14.61 10.23 2.070 2.169 0.872125 16.04 11.23 2.070 2.217 0.863147 16.29 11.40 2.325 2.229 0.845641 16.35 11.44 2.325 2.297 0.8653147 16.35 11.46 2.325 2.297 0.9953.7 16.39 12.70 2.425 2.571 0.7954.7 18.14 12.70 2.560 2.610 2.619 0.9963.8 19.12 13.39 2.610 2.619 0.9953.9 19.12 13.39 2.610 3.046 0.9975.9 20.89 14.62 3.250 3.159 0.9967.7 21.87 15.31	34.	104625.	1.776	1.951	0.929430	14.41	10.13	3.516E-û5
1.940 1.674 1.674 1.623 2.070 2.169 0.87215 16.04 11.23 2.070 2.217 0.863147 16.29 11.40 2.325 2.229 0.845641 16.35 11.40 2.325 2.297 0.86531 16.69 11.69 2.425 2.597 0.795427 18.14 12.70 2.425 2.571 0.795427 18.14 12.70 2.570 2.599 0.990328 19.12 13.39 2.610 2.619 0.995396 19.12 13.39 2.610 3.050 3.050 3.159 0.995757 21.87 15.51	35	104843.	1.540	1.871	0.917119	14.57	10.20	4.005E-u5
2.070 2.169 0.872125 16.04 11.23 2.165 2.217 0.863147 16.29 11.40 2.305 2.229 0.845641 16.35 11.40 2.325 2.297 0.86531 16.69 11.69 2.425 2.571 0.795427 18.14 12.70 2.570 2.599 0.995373 16.29 12.60 2.725 2.750 0.990328 19.12 13.39 2.610 2.619 0.995396 19.12 13.67 3.070 3.046 0.997595 20.69 14.62 3.250 3.159 0.996707 21.87 15.51	36	105000.	1.960	3.676	0.889337	14.61	10.23	4-271E-05
2.165 2.217 0.663147 16.29 11.40 2.505 2.229 0.86514 16.35 11.44 16.35 2.229 0.86541 16.35 11.44 11.44 2.325 2.229 0.86541 16.35 11.44 11.69 2.425 2.571 0.795427 18.14 12.70 2.580 2.599 0.990328 19.12 13.39 2.610 2.619 0.995296 19.62 13.67 2.610 3.070 3.046 0.997595 20.89 14.62 3.200 3.159 0.996707 21.87 15.31	37	107667.	2.070	2.169	0.872125	16.04	11.23	1.201E-04
2.305 2.229 0.845641 16.35 11.44 2.325 2.297 0.604021 16.69 11.69 2.425 2.571 0.795427 18.14 12.70 2.570 2.599 0.9953736 14.29 12.80 2.570 2.610 2.619 0.996328 19.12 13.39 2.610 2.619 0.995396 19.52 13.67 3.070 3.046 0.997595 20.69 14.62 3.250 3.159 0.996707 21.87 15.51	38	167832.	2.165	2.217	0.853147	16.29	11.40	4.565E-05
2.325 2.297 0.604021 16.69 11.69 2.425 2.571 0.795427 18.14 12.70 2.570 2.599 0.993736 14.29 12.80 2.725 2.750 0.990328 19.12 13.39 2.610 2.619 0.995796 19.52 13.67 3.070 3.046 0.997595 20.69 14.62 3.250 3.159 0.996707 21.87 15.51	36	107977.	2.305	2,229	0.845641	16.35	11.44	4.978E-35
2.425 2.571 0.795427 18.14 12.70 2.580 2.599 0.923736 14.29 12.60 2.725 2.750 0.990328 19.12 13.39 2.610 2.619 0.995396 19.52 13.67 3.070 3.046 0.997595 20.69 14.62 3.250 3.159 0.996707 21.87 15.31	70	109154.	2,325	2.297	0.604021	10.69	11.69	1.460E-04
2.580 2.599 0.923736 16.29, 12.60 6.923725 2.725 2.750 0.990328 19.12 15.39 15.39 2.610 2.619 0.995296 19.62 13.67 3.070 3.046 0.997595 20.89 14.62 3.200 3.159 0.996707 21.67 15.51	-14	110666.	2.4.25	2.571	0.795427	19.14	12.76	2.418t-04
2.725 2.750 0.990328 19.12 13.39 2.610 2.619 0.995396 19.52 13.67 3.070 3.046 0.997595 20.69 14.62 3.250 3.159 0.996707 21.67 15.51	4.2	116700.	2.5.8.C	5.599	0.923736	16.29	12.80	6.614E-04
2.610 2.619 0.995296 19.52 13.67 3.070 3.046 0.997595 20.89 14.62 3.200 3.159 0.996707 21.67 15.51	43	110900.	2.725	2.750	0.990328	19.12	13.39	9.340E-04
3.070 3.046 0.997595 20.89 14.62 3.200 3.159 0.998767 21.87 15.51	77	110853.	2.610	2,619	962366	19.52	13.67	1.0526-03
. 3.200 3.199 0.996707 21.87 15.31	45	110950.	3.070	3.046	0.997595	20.69	14.62	1.391E-03
	··· 95 ···	.1110001	3.200	3,159	0.998707	21.67	15.31	1.6336-03

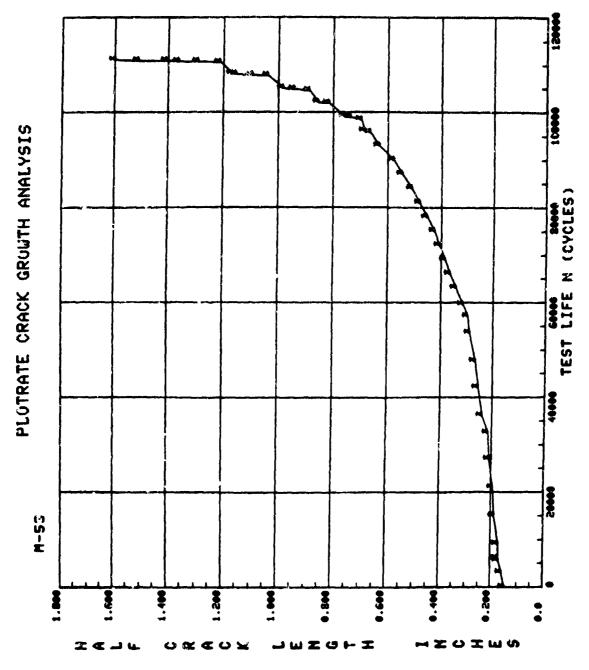


Figure 67. Crack growth curve for test M-53.

TABLE 66. DATA TABULATION FOR TEST M-54

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PWINE TEST FREGE 6.00 HZ. ENVIRONMENT CONDITION: AMMIRTALIA TEST FREGE 6.00 HZ. AMMIRTALIA NO. CYCLES A (MERANGED) A (FEGRESSIDAN) MULT. CORR. CCEFF K-MAX DELTA K DAZINA 1 CO.	CCT SPECIMEN		e= 6.750 IV.	W= 5.000 IN.	AN= 0.0 IN.			
AMPLENT AIR AMPLENT AIR	=NIWd		F & A X =			.00 HZ.		
CYCLES A (MEASUS 50) A (REGRESSION) MULT. CORR. CGEFF K-MAX DELTA K 6.0. 7C 0.3 C 0.3 C 0.3 C 0.9 620C 14.25 9.96 16.4. 0.3 C 0.4 36 0.9 64 31 15.19 10.63 9.96 16.4. 0.4 20 0.4 36 0.9 96 421 15.19 10.63 9.96 4.21. 0.4 20 0.4 36 0.9 96 421 15.19 11.65 11.65 11.65 4.21. 0.4 20 0.4 20 0.9 96 42 17.59 12.31 12.31 12.31 10.63 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.66 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.66 11.65 11.65 11.65 11.65 11.65 11.65 11.65 11.66 11.66 11.66 11.66<	ENVIRONMENT	: CONDITIONS	IN is					
6. 0.7 (c) 0.322 0.99623 14.25 9.98 164. 0.322 0.99623 14.25 9.98 164. 0.455 0.99623 16.65 11.65 164. 0.456 0.996472 17.39 10.63 4421. 0.456 0.996472 17.59 12.31 666. 0.555 0.996472 17.59 12.31 666. 0.555 0.99672 17.59 12.31 666. 0.555 0.99672 17.59 12.31 666. 0.555 0.99672 17.59 12.31 666. 0.555 0.99672 17.29 16.23 666. 0.766 0.9972 0.99136 16.23 666. 0.766 0.9972 0.99136 16.23 666. 0.766 0.9972 0.99136 16.23 7709. 0.769 0.99636 22.92 16.04 6761. 1.076 1.156 0.99637 2.236	NO.	CYCLES	A (MEASUF ED)	A (PEGRESSION)	MULT. CORR. CGEFF	K-M-X	DELTA K	DAZON
503. C.375 0.327 0.996232 14.25 9.96 3337. 0.423 0.439 0.994542 15.19 10.63 3337. 0.4439 0.995462 16.55 11.65 4421. 0.4439 0.9945462 17.59 12.31 4962. 0.555 0.9657 17.59 12.31 6064. 0.555 0.9657 19.41 12.56 6064. 0.555 0.9657 19.41 12.56 6064. 0.557 0.9657 19.41 12.56 6064. 0.9673 0.96136 22.92 16.04 7709. 0.9673 0.96954 22.92 16.04 6731. 0.9673 0.96954 22.92 16.04 6740. 0.9673 0.96954 22.92 16.04 6751. 0.9673 0.96954 22.92 16.04 6751. 1.076 1.154 1.153 19.13 6761. 1.260 1.146		ؿ));°0	JOE - J	1.600000	13.75	5.62	2.603E-05
164.* 0.375 0.436 0.995462 16.65 11.65 4421. 0.456 0.436 0.995462 16.65 11.65 4921. 0.466 0.466 0.995472 17.59 12.31 4962. 0.575 0.516 0.995276 15.33 12.69 4962. 0.575 0.556 0.995276 18.76 13.13 6064. 0.565 0.995 19.41 12.56 6064. 0.565 0.996 19.41 12.56 6064. 0.567 0.996 22.92 14.23 7094. 0.786 0.949 22.92 15.33 7709. 0.918 0.941365 22.92 17.09 7709. 0.920 0.941365 22.92 17.09 7709. 0.967 0.9674 24.42 17.09 7709. 0.967 0.9674 24.42 17.09 7709. 0.967 0.9674 24.85 17.29 7710. 1.166 1.175 0.9671 26.67 19.94 7710	r,	£00°	ر. يالا	0.322	0.996232	14.25	85.6	2.0916-05
2337. 0.453 0.453 0.95462 16.65 11.65 4421. 0.465 0.465 0.96472 17.59 12.31 4967. 0.515 0.516 0.995276 18.13 12.65 4967. 0.555 0.555 0.995276 18.76 12.65 6064. 0.555 0.995276 18.76 12.56 6064. 0.555 0.99527 19.41 12.56 6064. 0.555 0.991361 26.33 14.23 7337. 0.766 0.94366 22.92 16.04 7337. 0.963 0.975946 22.92 17.09 6757. 0.963 0.975946 22.92 17.09 6757. 0.963 0.975946 22.92 17.09 6757. 0.963 0.975946 22.92 16.01 6757. 1.076 1.164 1.164 1.164 1.164 6764. 1.076 1.189 0.9636 22.34 19.65 6206. 1.276 1.276 1.276 1.273 19.65	a)	1644.	0.375	0.365	1+5766*0	15.19	10.63	2.027E-05
4421. 0.46% 0.494972 17.59 12.31 4967. 0.57% 0.51% 0.99472 17.59 12.31 4967. 0.55% 0.996276 18.13 12.69 6064. 0.55% 0.967 19.41 12.56 6064. 0.55% 0.969125 14.23 14.23 6064. 0.76 0.9691361 20.33 14.23 7731. 0.76 0.76 0.94924 22.92 16.04 7709. 0.90 0.979 0.97894 22.92 17.09 7709. 0.90 0.978 0.94924 24.42 17.09 7709. 0.90 0.973 0.94924 24.42 17.09 7709. 0.90 0.96 0.96924 24.42 17.09 7710. 1.07 1.16 0.96924 24.42 17.09 7711. 1.07 1.15 0.96922 26.07 19.01 7711. 1.07 1.15 0.969102 26.07 19.01 772. 1.27 0.969102 26.07 <th>4</th> <th>3331.</th> <th>0.430</th> <th>3,440</th> <th>0.995462</th> <th>16.65</th> <th>11.65</th> <th>2-280E-05</th>	4	3331.	0.430	3,440	0.995462	16.65	11.65	2-280E-05
4962. 0.575 0.516 0.99526 15.13 12.69 5515. 0.545 0.555 0.99526 19.41 13.13 6064. 0.545 0.557 0.9622 19.41 12.56 6064. 0.545 0.649 0.991361 20.33 14.23 6064. 0.776 0.941361 20.92 15.33 7709. 0.756 0.945 22.92 15.33 7709. 0.950 0.96946 22.92 16.04 8727. 0.960 0.96946 24.42 17.39 6761. 1.164 0.96946 24.42 17.39 6771. 1.076 1.164 0.96994 24.42 17.39 6771. 1.164 1.164 0.64133 27.16 19.65 6781. 1.166 1.166 26.07 19.65 6781. 1.166 1.166 26.07 19.66 6781. 1.166 1.276 26.07 19.66	พา	4421.	0.40.	0.485	0.994972	17.59	12.31	2-746E-05
5515. 0.545 0.996225 18.76 13.13 6064. 0.565 0.597 0.976027 19.41 12.56 6613. 0.565 0.649 0.991361 20.33 14.23 7337. 0.776 0.749 0.991361 22.92 15.33 7709. 0.950 0.975946 22.92 16.04 8775. 0.967 0.975946 22.92 17.09 8777. 0.967 0.975946 22.92 17.09 8771. 1.076 0.967 0.929213 24.42 17.09 8771. 1.076 0.967 0.929213 24.42 17.09 8771. 1.076 0.967 0.929213 24.42 15.01 8771. 1.076 0.967 0.929213 27.38 19.01 8772. 1.276 0.9675 20.07 19.65 8786. 1.276 1.577 0.96675 22.47 8716. 1.577 1.577 22.59 8716. 1.577 2.578 22.59	•	4965	0.535	0.516	91 2556.0	15,13	12.69	3.367E-05
6664. 0.564 0.592 6.946027 19.41 12.56 6613. 0.649 0.991361 20.33 14.23 7237. 0.776 0.749 0.941365 21.90 15.33 7709. 0.776 0.749 0.975946 22.92 16.04 7709. 0.920 0.975946 22.92 16.04 827. 0.9673 0.975946 22.92 17.09 827. 0.9673 0.96594 24.42 17.09 827. 0.9673 0.96954 24.42 17.09 877. 1.076 1.164 0.96954 24.42 17.29 878. 1.076 1.164 0.96133 27.16 19.61 878. 1.166 1.155 0.96123 27.33 19.65 878. 1.166 1.189 0.9961626 26.07 19.66 878. 1.278 0.9961626 26.07 19.47 8314. 1.578 0.996326 22.26 22.59 8314. 1.578 0.996836 22.26 22.59	7	5515.	0.545	0.555	6.976.35	18.76	13,13	3.627E-05
6613. C.565 0.649 0.991361 2C.33 14.23 7237. 0.776 0.749 0.941365 21.90 15.33 7709. 0.926 22.92 16.04 8272. 0.9673 C.96954 24.42 17.09 8272. 0.9673 C.96954 24.42 17.09 8272. 0.9673 C.96954 24.92 17.29 8272. 0.9673 C.96954 24.92 17.29 8771. 1.076 1.164 C.827733 26.87 16.81 8781. 1.166 1.155 0.96123 27.33 19.65 8782. 1.266 1.189 0.961626 26.07 19.65 8783. 1.278 0.9951626 26.07 19.96 9314. 1.578 0.986679 32.10 22.58 9314. 1.578 0.996326 32.77 22.94	&	6064.	5 . S	0.500	6.986627	17.41	12.58	4.8366-05
7337. 0.726 0.749 0.941365 21.90 15.33 7709. 0.950 0.978946 22.92 16.04 8273. 0.9673 0.96954 24.42 17.09 8277. 0.9673 0.96954 24.42 17.09 877. 0.967 0.9673 24.85 17.29 876. 1.076 1.164 0.9673 26.67 16.81 877. 1.076 1.125 0.641333 27.16 19.13 878. 1.160 1.139 0.76636 27.33 19.13 878. 1.260 1.139 0.9951626 26.07 19.65 8906. 1.255 1.278 0.995162 25.47 19.94 9314. 1.517 0.896679 32.10 22.58 9314. 1.578 0.996326 32.77 22.94	•	6613.	6.545	0.649	0.991381	ZC.33	14.23	5.906E-05
7709. 0.950 0.918 0.978946 22.92 16.04 6.25. 0.963 0.96954 24.42 17.09 6.27. 0.963 0.929213 24.85 17.39 6.76. 1.076 1.164 0.929213 24.85 17.39 6.76. 1.076 1.155 0.641333 27.16 19.13 6.77. 1.16 1.139 0.76626 26.67 19.65 8.77. 1.26 1.139 0.9961626 26.07 19.65 8.77. 1.26 1.195 0.9961626 26.07 19.65 9309. 1.255 1.278 0.9961626 26.07 19.94 9314. 1.517 0.896679 32.10 22.47 9314. 1.578 0.996326 32.77 22.94	01	7337.	0.725	0.749	0.941365	21.90	15.33	8.687E-05
6252. 0.900 0.973 0.96954 24.42 17.09 6297. 0.967 0.967 0.96924 24.85 17.29 6761. 1.076 1.164 0.9672 26.87 16.81 6761. 1.076 1.125 0.691333 27.16 19.13 6781. 1.140 1.139 0.961626 26.07 19.65 8742. 1.266 1.195 0.951626 26.07 19.65 9206. 1.255 1.278 0.905755 25.47 9314. 1.517 0.896679 32.10 22.47 9314. 1.578 0.9983.6 32.77 22.94		.6022	0.5.0	S. 63.8	0.975946	22.92	16.04	9.072E-05
F297. 0.95923 24.85 17.39 6761. 1.076 1.164 6.82273 26.67 16.81 6761. 1.076 1.155 0.64133 27.16 19.03 6781. 1.076 1.139 0.766936 27.33 19.13 8762. 1.266 1.139 0.951626 26.07 19.65 9206. 1.276 1.276 26.07 19.94 9369. 1.46 1.576 22.47 22.47 9314. 1.57 1.530 0.890679 32.10 22.47 9316. 1.575 1.571 0.9983.6 32.77 22.94	71	e Cu Cu Cu	03.0	0.973	425696°O	24.43	17.09	1.104E-04
6761. 1.0?° 1.164 6.822732 26.67 16.81 6771. 1.07° 1.155 0.641333 27.16 19.01 678*. 1.16° 1.139 0.766936 27.33 19.13 874?. 1.2° 1.195 0.951626 26.07 19.65 9206. 1.2° 1.195 0.961626 26.07 19.65 9369. 1.5° 1.5° 0.896679 32.10 22.47 9314. 1.57 1.57 1.57 22.58 9316. 1.57 1.57 22.94	E	£ 297.	O.¥FC	0.953	0.929213	24.85	17.39	1 ,2546-04
F771. 1.076 1.155 0.641333 27.16 19.01 678. 1.140 1.139 0.76026 27.33 19.13 8742. 1.260 1.195 0.951626 26.07 19.65 9206. 1.255 1.278 0.905755 28.49 19.94 9369. 1.46 1.517 0.896679 32.10 22.47 9314. 1.57 1.530 0.897756 32.26 22.58 9316. 1.575 1.571 0.9983.6 32.77 22.94	14	£761.	1.075	1.16.4	6.8723	26.97	16.91	2-052E-64
678** 1-140 1-139 0.760236 27.33 19.13 8747 1-200 1-195 0.951026 26.07 19.65 8806 1-255 1-276 0.905755 28.49 19.94 936 1-40 1-517 0.860679 32.10 22.47 9314 1-51 1-520 0.867756 32.26 22.58 9316 1-575 1-571 0.9983.6 32.77 22.94	15	£771.	1.070	1.125	0.691333	27.16	16.01	6.820E-04
274?. 1.200 1.195 0.951026 26.07 19.65 9200. 1.255 1.276 0.905755 28.49 19.94 9309. 1.405 1.517 0.867756 32.10 22.47 9314. 1.517 0.857756 32.26 22.58 9316. 1.575 1.571 22.94	91	678.	1-140	1-139	0.760236	27.33	19.13	2.122E-04
9806. 1.255 1.278 0.905755 29.49 19.94 9369. 1.465 1.517 0.880679 32.10 22.47 9314. 1.515 1.530 0.897766 32.26 22.58 9316. 1.575 1.571 22.94	17	6747	1.200	1.195	0.951026	26.03	19.65	2.711E-03
9309- 1-405 1-517 0.890679 32-10 22-47 9314- 1-515 1-530 0.897756 32-26 22-58 9316- 1-575 1-571 0.998326 32-77 22-94	18	•30sa	1,255	1.278	0.905755	25.49	19.94	2.307E-03
9314. 1.575 1.520 0.857756 32.26 22.58 9316. 1.575 1.571 0.998326 32.77 22.94	16	6366	1.405	1.517	6190660	32.10	22.47	2.322E-04
9316. 1.575 1.571 0.998326 32.77 22.94 1	07	¢314.	1.515	1.520	0.857756	32.26	22.58	5.191E-03
	12	.916,	1.575	11.571	0.998326	32.17	22.94	1-2416-02

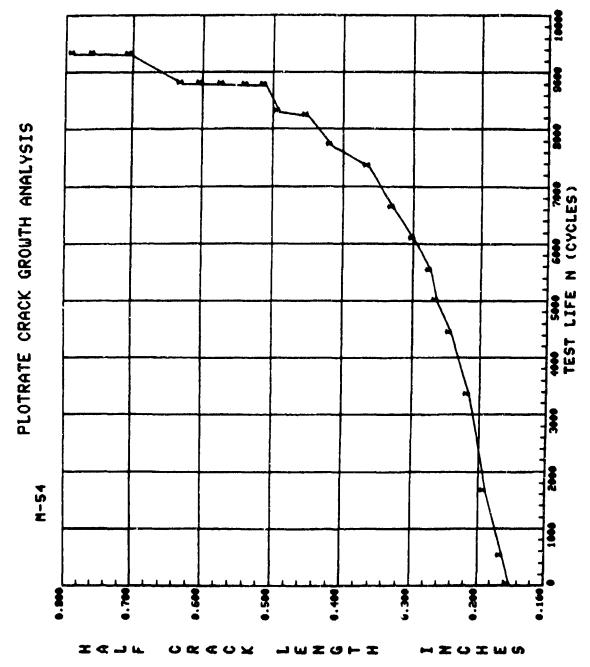


Figure 68. Crack growth curve for test M-54.

TABLE 67. DATA TABULATION FOR TEST M-55

TEST FREQ= 5.00 HZ.

AN= C.0

W= 6.000 IN.

E= 0.250 IN. PMAX=

CCT SPECIMEN

PMIN=

M-05
QX
IMER
PEC

ENVIRONMENT CONDITION:	CONDITION:	AMBIENT AIR					
NO.	CYCLES	A (MEASURED)	A (REGRESSION)	MULT. COF.R. CJEFF	K-MAX	DELTA K	DAZON
_	•	C.313	C.313	0.999653	14.04	14.04	2.112E-07
~	790ú.	0.325	0.334	675196"9	14.51	14.51	1.431E-06
m	13000.	0.340	0.339	0.865594	14.62	14.62	7-136E-67
4	20000	971.0	0.342	0.902301	14.65	14.65	3.0926-67
'n	110000.	C. 255	C-395	0.942072	15.80	15.00	3-640E-01
6	143000	615.0	0.418	0.972504	16.26	16.25	4-796E-07
7	182986.	0.460	0.460	0.99566	17.67	17.07	6-1851-07
40	203000.	6.455	0.458	0.992640	17.58	17.58	6.368F-07
œ	22 300C.	025	0.516	162966.0	16.09	16.09	5-680E-67
0,	240000.	0.540	9.537	0.992418	13.45	15.45	1-425E-07
11	270000.	0.580	6.583	0.974162	19.25	19,25	8-316F-07
	\$00000	0.630	0.603	0192550	10.03	20.07	9.892E-07
13	333000.	C.715	0.706	9546450	21.24	21.24	1-1555-06
**	345166.	0.7.0	0.736	0.996635	21.12	21.72	1.1745-06
51	367300.	0.900	0.793	0.997261	22.55	22.55	1-2516-06
91	385000.	O. 255	0.835	0.957212	23.17	23.17	1.362E-06
11	40.000.	634.0	0.889	0.596599	23.94	22.94	1.4535-00
1	425.000.	544.0	0.943	644566.0	24.71	17.57	1-6.358-66
51	44500C.	1.016	1.014	0.999623	25.69	25.65	1.6466-06
50	459060.	1.070	1.059	2156560	25.41	26.41	2-1-2E-06
21	471000.	1.51.1	1.121	0.549132	27.10	27.10	2.3595-36
25:	48620.	1.190	1.194	0.996010	23.05	20.05	2.957E-06
23	455600.	1.276	1.273	167856-0	29.06	25.06	3.457E-UC
. 24	50700û.	1.320	3.324	1215450	29.70	25.70	3 .0 74E-46
25	517400.	1.415	1.412	? 210660	30.80	30,60	5-2646-06
5 6	522600.	1.460	1.455	609 166*0	31.48	31.48	5.5758-06
27	52780c.	1.510	1.525	0.952757	32.24	32.24	6.463E-06
28	53300¢.	1.625	1.595	3701550	35.66	30.56	7.4936-60

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TABLE 67. DATA TABULATION FOR TEST M-55 (CONCL)

SPECIMEN NL.: M-5"

CCT SPECIMEN	N 8 0.	. 550 IV.	W= 5.000 IN.	AN= 0.0 IN.			
a Z I Z G		PMAX=		TEST FREO= 6.00 HZ.	.бе нг.		
ENVIRONMENT	ENVIRONMENT CONDITION:	AMBICNT AIR		₹			
Q.	CYCLES	A (MEASURED)	AIREGRESSION	MULT. COMR. CUEFF	X-H-X	DELTA K	1/40
52	14C600.	1.765	1.705	0.490051		34.64	9.6928
30	544000.	1.915	1.831	0.58945		35.54	1.1738
31	545600.	1.545	1.889	92586.0	35.65	36.65	1.4686
32	551042.	1.965	1.96.5	0.949351		37.59	1.632

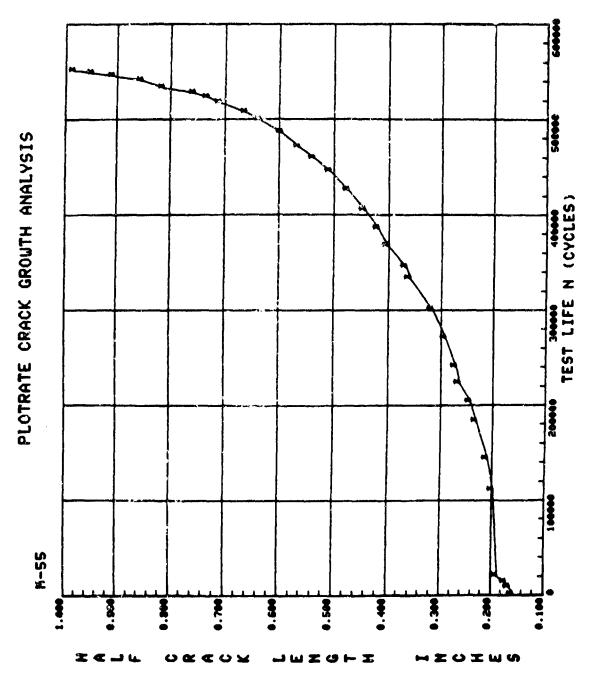


Figure 69. Crack growth curve for test M-55.

TABLE 68. DATA TABULATION FOR TEST M-56

SPECIMEN NT.: M-56

			DAZDM	2.391E-05	1-968E-05	1.872E-05	1.781E-05	1.741E-05	1.6535-05	2.133E-05	2.832E-05	3.517E-05	3.7955-05	4 .008E-05	4-420E-05	4-5905-05	-1-126E-04	1-128E-03	1.109E-02	1.626E-02	2.080E-02	2.368E-02
			DELTA K	13.90	15.34	16.00	17.79	18.15	19.28	20.79	22.29	22.68	22.73	26.27	26.25	26.31	30.50	31.22	31.91	32.87	34.51	36.14
	.00 HZ.		K-HAX	13.90	15.34	16.00	17.79	19.15	19.28	20.79	22.29	22.68	22.73	26.27	26.24	25.31	30.50	31.22	31.91	32.67	34.51	36.14
AN= 0.0 JN.	TEST FREG≈ 6.00 HZ		MULT. CORR. COEFF	0-954264	0.932112	C.987364	0.990768	066686.0	0.982886	0.932647	0.952563	0.941614	0.919589	0.936819	0.919623	0.659168	0.738418	0.561292	60*446*0	0.995637	1971660	796566*1
W= 6.000 IN.			A(REGRESSION)	3.306	0.373	0.405	0.500	0.520	0.585	0.678	0.775	0.801	0.805	1.056	1.056	1.061	1.355	1.445	1.501	1.579	1.714	1.647
0.250 IN.	# X 4	AMBIENT AIR	A (MEASURED)	0.30g	0.350	C • 4:05	ت براد ت	5.55	364.0	0.575	5.7.0	(, 7° F	.1		1.076	~	• -	^	ا د د د ا ا	ur .	~	1.046
9		ENVIRONMENT CONDITION:	CYCLES	; ;	1600.	1545	5115.	٠ توريخ د	774-	10326.	12455	12919.	13056.	15520.	15546	15610.	16104.	15114.	15176	157	1,150	• • • • • • • • • • • • • • • • • • • •
CCT SPECIMEN	=NIM4	ENVIRONMENT	ָרָי. מָרִי		i'u	(€)	.	۵٦	انه		٠.	6	٦٢	=	21	<u> </u>	7[<u>.</u> `	<u>9</u>	_	<u>.</u>	٥-1



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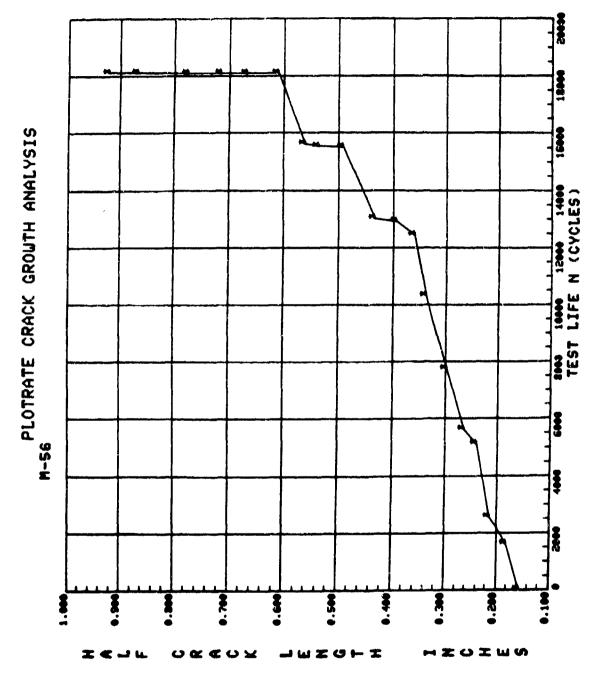


Figure 70. Crack growth curve for test M-56.

SPECIMEN MALE M- 7

			K	2,				1.548F-05			2-178F-05				-	9.2715-05			. 641
			DELTA K	35.07	39.38	41.08	44.78	47.99	66 6 5	52,16	56.36	61.06	61.10	68.60	69.81	69,32	04.69	76.06	95.80
	.00 HZ.		K-MAX	26.97	30.30	31.60	34.44	36.91	38.46	40-12	43.35	16.94	47.00	52.17	53.70	53.33	53.38	58.51	73.69
AN= 0.0 IN.	TEST FREQ= 6.00 HZ.		MULT. CORR. COEFF	0.979168	0.983856	0.961451	0.976818	0.984024	1955597	0.972610	0.974667	0.965448	0.933916	0.833640	0.824265	0.941338	0.961066	0.963426	0.993216
W= 5.000 IN.			A(FEGRESSION)	0.289	n.364	295.0	0.469	0.537	0.552	0.632	0.735	C. 857	C. 858	1.067	1.102	1.088	1.0%0	1.288	1.505
250 IV.	cw X x=	LM31. NT AIP	(CIBASTEA) I	0.290	ت ∴ • 0	577.0	(6)	ਲ' 'ਜ' €	0:5.0	35.50	0.126	U * 0 * J		0.445	3,055	1.155	000.1	¥30.*	1.36.5
045°) = 3		ENVIRONMENT CENDITIONS	CYCLES	٠.	1600.	20.4.7	.090.	70.0	9116.	10560.	159631	15570.	15626.	1754(.	16174.	10163	16100.	19445.	26.751.
FCT CPECIMEN	=NIVd	ENVIPONMENT	N.O.		١	۴.	7	Ľ١	4)	7	ı	٠.	<u>ت</u>		71	2	71		16

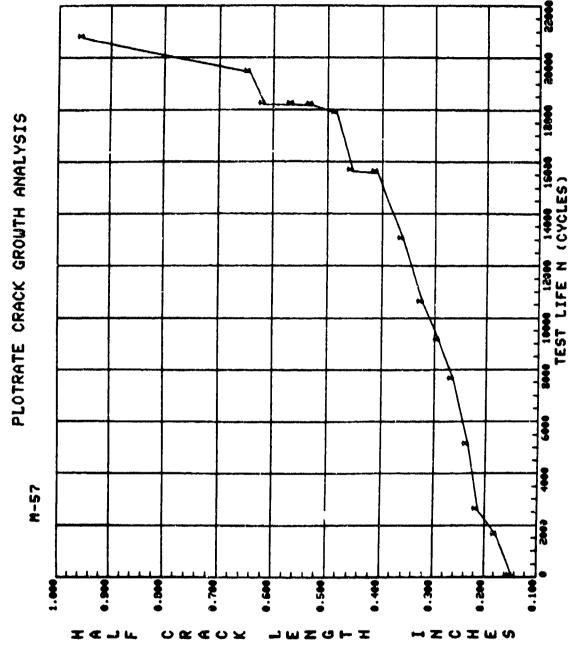


Figure 71. Crack growth curve for test M-57.

TABLE 70. DATA TABULATION FOR TEST M-58

SPECIMEN NO.: M-58

PHINE PHAXE TEST FREGE 6.00 HZ. ENVIRONMENT CONDITION: AMBIENT AIR TEST FREGE 6.00 HZ. ENVIRONMENT CONDITION: AMBIENT AIR DELTA K DAZON 1 0.0305 0.505 0.977052 27.71 31.87 2.916-05 2 0.305 0.416 0.977052 27.71 31.87 2.916-05 3 2000 0.405 0.416 0.97726 23.97 33.32 2.2646-05 4 2000 0.416 0.416 0.415 0.4176 0.916-05 37.26 2.2646-05 5 2500 0.416 0.630 0.174817 36.63 41.43 1.106-04 5 2500 0.570 0.572 0.709693 31.32 2.2646-05 6 2500 0.573 0.996026 31.33 41.06 9.2646-05 7 2500 0.573 0.996026 40.17 46.19 11.106-04 10 2500 0.575 0.996026 40.14 <t< th=""><th>CCT SPECINEN</th><th>,</th><th> B= 2.250 IV.</th><th>"NI 000"9 = A</th><th>AN= 0.0 IN.</th><th></th><th></th><th></th></t<>	CCT SPECINEN	,	B= 2.250 IV.	"NI 000"9 = A	AN= 0.0 IN.			
AMRIENT AIR AMRIENTA K AMRIENT AIR AMRIENT AIR AMRIENT AIR AMRIENT AIR AMRIENTA K AMRIENTA AIR AMRIENTA K AMRIENTA AIR AMRIENTA AI	PMINE		PMAX=		TEST FREG= 6	.50 HZ.		
AffREASURED! AfreeAcured! COKR. CUEFF K-MAX DELTA K 0.305 0.305 0.997052 27.71 31.87 0.305 0.305 0.997052 27.71 31.87 0.340 0.416 0.823051 32.42 37.28 0.405 0.416 0.708 37.42 41.43 0.450 0.512 0.708 37.42 43.04 0.450 0.570 0.708 0.708 44.05 0.570 0.573 0.998026 42.42 43.04 0.570 0.573 0.998026 42.45 46.15 0.70 0.70 0.998026 42.45 46.15 0.70 0.70 0.705 0.998026 42.45 46.15 0.70 0.70 0.705 0.998026 45.26 52.00 0.99 0.99 0.99845 44.06 53.83 0.99 0.99 0.99845 54.47 62.64 1.100 1.465 <t< th=""><th>ENVIRONMENT</th><th>CONDITION</th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	ENVIRONMENT	CONDITION						
0.305 0.947052 27.71 31.87 0.340 0.416 0.91726 23.97 33.32 0.405 0.416 0.0823051 32.42 37.28 0.405 0.416 0.0709693 37.42 41.43 0.450 0.552 0.709693 37.42 43.04 0.570 0.573 0.99862 40.17 46.19 0.450 0.99862 40.17 46.19 0.797 0.99862 40.17 46.19 0.795 0.99862 40.17 46.19 0.795 0.99874 45.22 52.00 0.851 0.99844 46.19 50.64 0.851 0.99874 46.19 50.64 0.851 0.99874 46.19 50.64 0.851 0.99844 46.19 50.64 0.851 0.99844 46.19 50.64 0.851 0.99844 69.64 72.95 1.60 1.131 60.64 53.63 1.505 1.650 0.96784 72.36 1.650	NO	_ CYCLES		A (REGRESSION)	MULT, COKR, COSEE	X - M - X	DELTA K	20,40
0.340 6,333 0.91726b 23.97 33.32 0.416 0.615 0.616 32.42 37.28 0.416 0.617 35.42 37.28 0.450 0.512 0.709693 37.42 41.43 0.450 0.573 0.709693 37.42 44.06 0.570 0.573 0.99862b 40.17 46.19 0.750 0.7673 0.99862b 42.45 46.19 0.795 0.99862b 42.45 46.19 0.795 0.99862b 42.45 46.19 0.795 0.99867c 42.45 46.19 0.797 0.99867c 45.22 52.00 0.851 0.9987c 46.19 46.19 0.952 0.9977c 46.19 46.19 0.953 0.9954c 49.24 46.40 0.996 0.9954c 49.24 50.44 0.997 0.9976c 69.44 72.95 1.550 1.650 0.9967675 69.44 72.36 1.550 1.650 0.99678914 72.36 </td <td>-</td> <td>ċ</td> <td></td> <td>0.305</td> <td>6-947032</td> <td>27.71</td> <td>31.87</td> <td>2.416F-05</td>	-	ċ		0.305	6-947032	27.71	31.87	2.416F-05
0.416 0.823051 32.42 37.28 0.415 0.512 0.747817 36.63 41.43 0.450 0.552 0.709693 37.42 43.04 0.450 0.573 0.995909 37.42 44.06 0.570 0.573 0.998628 40.17 46.19 0.750 0.763 0.998628 40.17 46.19 0.750 0.797 0.998628 42.45 46.19 0.750 0.797 0.998679 45.22 52.00 0.850 0.99774 46.19 46.19 0.951 0.99774 46.19 52.00 0.952 0.99774 46.10 53.83 0.952 0.99774 46.10 53.83 1.160 1.131 0.997851 54.47 62.64 1.505 1.650 0.967875 69.44 72.95 1.505 1.650 0.967875 69.44 72.36 1.505 1.650 0.967844 72.36 33.22	2	717.	0.340	6,333	0.917266	23.97	33,37	2-264F-05
0.415 0.512 0.747817 36.63 41.43 0.450 0.552 0.709692 37.42 43.04 0.450 0.573 0.995905 36.33 44.06 0.570 0.573 0.998026 40.17 46.15 0.450 0.470 0.998026 42.45 46.15 0.750 0.770 0.9940 45.22 52.00 0.750 0.797 0.997774 46.80 53.83 0.950 0.950 0.997774 46.80 53.83 0.950 0.970 0.995445 44.06 56.40 0.970 0.970 0.995445 50.64 56.40 1.100 1.131 0.995445 50.64 53.25 1.530 1.465 0.99785 54.47 62.64 1.555 1.650 0.99787 68.44 72.95 1.675 1.650 0.996787 72.36 33.22	m	2000.	0.405	0.415	0.823051	32.42	37.28	5.9E7E-05
0.490 0.709693 37.42 43.04 0.570 0.573 0.995905 36.33 44.06 0.570 0.633 0.998026 40.17 46.15 0.750 0.775 0.998026 42.45 46.81 0.770 0.797 0.999490 45.22 52.00 0.770 0.797 0.997774 46.80 53.83 0.950 0.997774 46.80 53.83 0.950 0.997774 46.80 53.83 0.950 0.997774 46.80 53.83 1.100 1.131 6.893295 54.47 62.64 1.530 1.465 0.9602144 63.43 72.95 1.555 1.650 0.9964914 72.36 33.22	•	2500.	0.415	0.512	0.747817	36.63	41.43	1 - 1 úlf - 64
0.570 0.573 0.995909 36.33 44.06 0.630 0.633 0.998026 40.17 46.15 0.70 0.775 0.998026 42.45 46.81 0.770 0.797 0.999490 45.22 52.00 0.775 0.797 0.997774 46.80 53.83 0.950 0.970 0.997774 46.80 53.83 0.970 0.970 0.997774 46.80 53.83 0.970 0.970 0.979 60.979 50.64 50.40 1.100 1.131 0.979 62.64 72.95 1.530 1.465 0.99785 68.44 72.95 1.555 1.650 0.99787 68.44 72.95 1.675 1.650 0.996787 68.44 72.95	'n	:550	0.440	0.552	0.709693	37.42	43.04	2.326E-04
0.630 0.633 0.998628 40.17 46.15 0.70 0.705 0.998726 42.45 46.81 0.77 0.999440 45.22 52.00 0.75 0.797 0.999440 46.80 53.83 0.850 0.99774 46.80 53.83 0.950 0.950 0.99774 46.80 53.83 0.950 0.970 0.95445 44.04 56.40 0.950 0.979 0.979 62.64 55.40 1.160 1.131 6.893295 54.47 62.64 1.530 1.465 0.9602144 63.43 72.95 1.555 1.675 0.967875 68.44 72.95 1.675 1.675 0.954914 72.36 33.22	b	2600.	0.576	0.573	505556*0	36.33	44.05	9.924E-04
0.760 0.765 0.99673c 42.45 46.61 0.795 0.797 0.99949c 45.22 52.00 0.850 0.99774 46.80 53.83 0.950 0.979 0.997774 46.80 53.83 0.950 0.979 0.997774 46.80 56.40 0.950 0.979 0.97951 50.64 55.40 1.160 1.131 6.893295 54.47 62.64 1.530 1.465 0.962144 63.43 72.95 1.555 1.650 0.967875 68.44 72.95 1.675 1.650 0.964914 72.36 33.22	~	2630.		0.633	0.998628	40.17	46,17	1-186E-03
0.795 0.797 0.99944C 45.22 52.00 0.850 0.99774 46.80 53.83 0.950 0.979 0.997774 46.80 53.83 0.950 0.979 0.97951 50.64 56.40 0.970 0.97951 50.64 52.64 1.100 1.131 6.893295 54.47 62.64 1.530 1.465 0.962144 63.43 72.95 1.555 1.650 0.967875 68.44 72.95 1.675 1.650 0.964914 72.36 33.22	€0	2666.	0°2'0	0.705	0.996730	42.45	48.61	1-4495-03
0.850 0.851 0.997774 46.80 53.83 0.997774 46.80 53.83 0.950 0.950 0.9545 49.04 56.40 56.40 0.950 0.97951 50.64 56.40 56.64 56.40 1.131 6.893299 55 54.47 62.64 1.530 1.455 0.9678184 63.43 72.95 1.675 1.650 0.967875 69.44 78.70 3.954914 72.36 33.22	•	2690.	0.795	0.797	0.599440	45.22	52,00	1 -8 20F -03
0.9%0 0.9%45 49.54 55.45 55.45 55.45 55.45 55.28 55.28 55.45 55.28 55.47 52.84 53.28 1.1%0 1.1%1 6.8%2255 54.47 62.64 72.95 1.5%0 1.4%5 69.44 72.95 1.6%0 0.967675 69.44 72.95 33.22	2	2705.	€.6.0 €.6.5	0.851	417765-0	46.80	53.83	2.197E-63
0.990 0.97951 50.64 54.28 1.100 1.131 0.893295 54.47 62.64 1.530 1.455 0.962144 63.43 72.95 1.505 1.690 0.967675 68.44 78.70 1.675 1.650 0.954914 72.36 33.22	, mi	2723.	0.6.0	0.630	555560	40.64	56.40	3.1716-03
1.166 1.131 6.893295 54.47 62.64 1.330 1.455 . 0.9621a4 63.43 72.95 1.565 1.690 0.967675 69.44 78.70 1.675 1.650 0.954914 72.36 33.22	77	2735.	∂65.0	645°0	1536150	50.63	5 3.23	4-289E-03
1.530 1.465 . 0.9021a4 63.43 72.95 1.505 1.690 0.907675 68.44 78.70 1.675 1.650 0.954984 72.36 33.22	13	2750.	1.100	1.131	6525680	54.47	62.64	8-118F-43
1.505 1.690 0.967675 68.44 78.76 1.675 1.650 0.954914 72.36 33.22	*	2767.	1.330	1.485	, 0.962144	63.43	72.95	1.7116-02
1.675 1.650 0.954914 72.36 33.22	15	2772.	1.505	1.690	0.967675	44.69	78.70	7-677F-67
	16	2774.	1.675	1.650	2.954914	12.36	33.22	5-170E-02

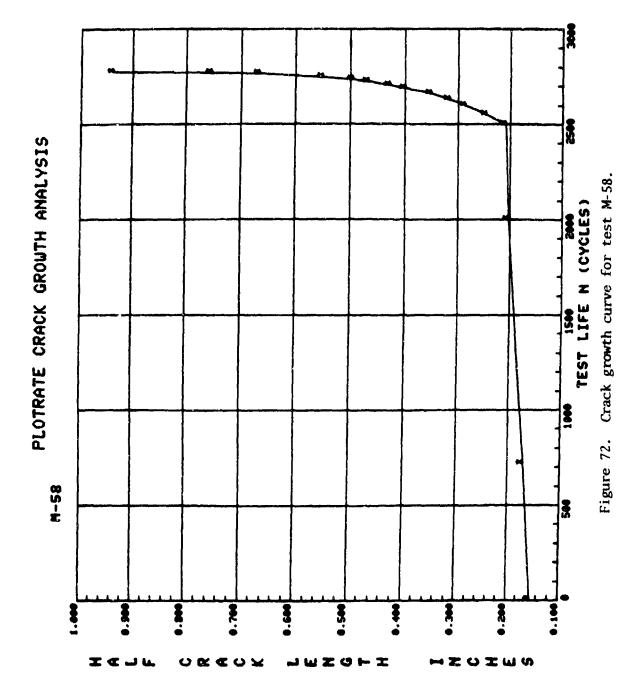


TABLE 71. DATA TARULATION FOR TEST M-59

PECIMEN NC.: M-19

FORTINE ENVIRONMENT CONCILION: AND LANGE CREED & D.D. HZ. NO. CYCLES ALWEASUR'D) A(RECKESSION) WULT. COMM. CUFF K-MAX DILLA K JA/JON 12.0.315 0.315	CCT SPECINEN	H .C3	0.250 IV.	W= 6.000 IN.	AN= 0.0 IN.			
NUTRONNENT CONCITLUATE AND LATE (LKESSION) VULT. CURR. CUFF K—KAX DELTA K 22.63 6.72 6.72 6.72 6.72 6.72 6.72 6.72 6.72	PHINE		F4KX=		ST FREG=	H2		
NO. CYCLES A (WFRSURTD) A (KFECKFSSION) WULT. COMPR. CUTFA DELITA DELITA 1 0.315 0.315 0.99951 22.33 22.63 6.22 2 0.315 0.475 0.475 0.475 24.52 24.12 6.22 4 6000. 0.475 0.475 0.475 24.22 24.12 6.25 5 6500. 0.475 0.475 0.49522 24.02 24.13 11.0 6 6500. 0.475 0.49621 24.02 24.13 11.0 6 6500. 0.476 0.475 0.49621 24.23 24.13 11.0 6 6500. 0.476 0.475 0.49646 24.02 24.13 11.0 10 6910. 0.476 0.496 0.49646 34.26 34.36 34.3 34.3 34.3 34.3 34.3 34.3 34.3 34.3 34.3 34.3 34.3 34.3 34	ENVIRONMENT		LNJ					
1 0.00	NO.	CYCLES	ASURID	IR FUKE	. COMR.	K-KAX	ELTA	MQ/YC
2 5265. 0.251 0.454 0.99479 22.33 24.12 6.74 4 6000. 0.475 0.474 0.997529 22.35 24.12 6.71 6 6000. 0.475 0.474 0.474 0.475 0.475 0.476 0.477 0.477 0.477 0.477 0.477 0.477 0.477 0.476 0.477	-	.	0.31	0.315	56656"0	21.14	22.63	•
3 5/51. 0.425 0.474 0.995744 24.56 26.53 0.995744 24.56 26.53 0.977267 26.62 28.10 1.0 6 6.50. 0.445 0.475 0.977267 27.53 29.73 1.0 6 6.50. 0.476 0.564 0.96449 29.03 31.35 21.35 2.1 8 6.607. 0.476 0.673 0.966449 29.44 31.35 2.1 9 6.872. 0.967 0.96449 32.94 33.485 3.0 10 6.910. 0.75 0.96449 32.94 33.485 3.0 11 6.910. 0.677 0.99649 34.28 37.02 4.9 12 6.910. 0.677 0.99649 34.96 37.02 4.9 13 6.920. 0.99649 34.96 37.75 4.9 13 6.920. 0.99649 34.96 37.75 4.9 14 7100.	~	5265.	0.150	0.351	3464440	22.00	¥.1	-776E-0
4 60000. 0.4475 0.475222 26.02 28.10 1.0 5 6292. 0.453 0.977267 25.02 28.10 1.0 6 6500. 0.456 0.654 0.9973267 27.53 28.73 1.5 7 6705. 0.476 0.654 0.996514 31.35 33.85 3.0 8 6407. 0.475 0.996514 31.35 31	m	5751.	6.475	0.474	446 50 60	24.56	3	8.66EE-05
5 6.20° 0.551 0.977261 27.52 29.73 1.5 6 6.20° 0.550 0.9540 0.996145 29.05 31.35 2.4 7 6700 0.57 0.09649 29.05 31.35 2.4 9 6970 0.057 0.99649 32.94 35.57 3.1 10 6910 0.57 0.967 0.9966 35.54 37.75 4.9 11 6940 0.997 0.9966 35.57 3.7 4.9 12 6940 0.997 0.9966 35.59 3.7 4.9 13 7000 0.997 0.997 0.997 3.4 3.7 4.9 13 7000 1.007 0.997 0.997 3.5 3.4 4.2 6.3 14 7100 1.007 0.997 0.997 4.2 6.2 4.2 6.3 4.2 6.3 4.2 6.3 4.2 6.3 4.2 6.3<	~	•0009	0.4+5	0.475	6.979232	26.62	3.1	1 .0 70E -04
€ € 5500. 0.550 0.654 0.996515 29.03 31.35 23.35 23.36 33.85 3.03 31.35 <t< td=""><td>Ś</td><td>6.292.</td><td>0.515</td><td>O. 531</td><td>0.977267</td><td>27.53</td><td>29.73</td><td>1.5711-04</td></t<>	Ś	6.292.	0.515	O. 531	0.977267	27.53	29.73	1.5711-04
7 6700. 0.670 0.684 0.996515 31.35 33.85 3.08 8 6401. 0.753 0.96649€ 32.94 35.57 3.7 10 6910. 0.856 0.856 3.735 3.7 4.9 11 6940. 0.857 0.857 0.956 35.59 33.43 3.1 12 6940. 0.857 0.971 0.956/20 35.59 33.43 5.3 13 7050. 0.897 1.004 1.004 1.004 39.53 5.3 14 7100. 1.004 0.997 0.997 42.06 39.53 5.3 15 7100. 1.004 0.997 42.05 45.34 9.3 16 7100. 1.106 1.137 0.997 42.05 45.44 9.3 15 7100. 1.137 1.137 0.997 42.05 45.44 9.3 16 7100. 1.240 1.240 0.997	: •3	6500.	0.5.50	0.549	0.992145	29.03	31,35	2-171E-04
B CMOT. 0.753 0.996449 32.94 35.57 3.7 9 CMOT. 0.813 0.996449 32.94 35.57 3.7 10 6910. 0.817 0.996946 34.96 31.75 4.9 11 6940. 0.977 0.967 0.977 4.9 37.75 4.9 12 6980. 0.970 0.971 0.9267 36.59 33.43 5.9 13 7050. 0.970 0.9967 4.9 4.134 6.3 14 7100. 1.007 0.99697 4.24 4.134 6.3 15 7100. 1.007 0.99697 4.200 39.53 5.9 15 7200. 1.190 0.99697 4.200 4.24 9.9 18 7200. 1.475 1.475 0.99697 4.200 4.260 2.26 2.26 20 7200. 1.475 1.475 0.99697 4.200 4.200 2.200	_	6705.	3.476	0.684	0.996515	31.35	33.85	3.034E-04
9 6978 0.820 0.822 0.939999 0.949999 0.949999 0.949999 0.94999 0.94999 0.94999 0.94999 0.9499 0.94999<	J	£807.	0. /t.5	0.753	347956*0	32.94	35.57	3.7695-34
10 6910. 0.535 0.644 0.95555 34.96 37.75 4.9 11 6940. 0.57 0.644 0.95676 35.59 33.43 5.1 12 6940. 0.940 0.971 0.94540 36.60 39.53 5.3 13 7056. 0.940 0.092 0.94360 36.60 39.53 5.3 14 7100. 1.060 1.002 0.94360 34.21 42.66 7.3 15 7100. 1.060 1.034 0.94362 40.97 42.66 7.3 16 7150. 1.137 0.99523 40.97 44.26 8.7 17 7210. 1.240 0.99523 42.05 46.4 8.7 18 7240. 1.340 0.99537 45.16 46.6 9.9 19 7250. 1.475 0.99637 45.16 46.13 1.8 21 7360. 1.640 0.99637 46.16 52.6	•	6979	J.3: • 0	0.813	•	34.28	37.02	4.9366-64
11 6946. 0.577 0.573 0.92672 35.59 34.43 5.1 12 6980. 0.940 0.971 0.936.0 36.60 39.53 5.9 13 7050. 0.995 1.002 0.99540 42.66 7.3 5.9 14 7100. 1.000 0.99540 42.66 42.66 7.3 5.9 15 7150. 1.137 0.995924 42.05 42.46 6.7 16 7180. 1.137 0.995924 42.05 42.46 6.7 16 7180. 1.137 0.995924 42.05 45.41 9.9 17 7210. 1.256 0.99524 42.05 45.41 9.9 17 7210. 1.256 0.99524 42.05 45.41 9.9 18 720. 1.256 0.99524 45.33 45.81 1.3 20 720. 1.475 0.99534 45.33 45.46 2.3	01	.0169	0.635	0.644	250 32 5 0	34.96	37.75	4.9975-04
12 6980. 0.5440 5.951 C.993640 36.60 39.53 5.96 13 100 1.002 0.993640 36.20 41.34 6.33 14 7100. 1.006 0.99364 39.51 42.62 7.34 6.31 15 7150. 1.15 1.137 0.99524 42.05 45.41 9.9 16 7160. 1.15 1.157 0.99524 42.05 45.41 9.9 17 7210. 1.26 1.274 0.99524 42.05 45.41 9.9 18 7210. 1.26 1.274 0.99524 45.45 45.41 9.9 19 7270. 1.26 1.410 0.99369 45.16 46.69 1.13 20 7270. 1.45 1.475 0.99369 45.16 46.69 1.3 21 7350. 1.649 0.994655 46.16 46.69 1.3 23 7350. 1.745 1.64	—	6940.	U-;-U	0.673	0.936626	35.59	30.43	5-102F-64
7056. 0.995 1.002 0.993001 38.28 41.34 6.3 7103. 1.000 1.0053 0.992952 39.51 42.68 7.3 7103. 1.000 1.0053 0.992952 45.26 7.3 44.26 8.7 7180. 1.150. 1.254 0.99932 42.05 45.41 9.9 7210. 1.250. 1.475 0.99372 45.16 46.69 1.1 7270. 1.475 1.475 0.994372 45.16 49.81 1.6 7290. 1.475 1.475 0.994372 47.33 51.17 1.9 7310. 1.550 1.640 0.994572 48.76 52.66 2.3 7310. 1.650 1.640 0.996525 48.76 52.66 2.3 7310. 1.650 1.640 0.996525 66.76 52.66 2.3 7320. 1.640 0.96634 55.61 56.74 3.8 7320. 1.975	77	.0869	0.040	126.0	0.436440	36.60	39.53	5.970t-04
7100. 1.5c0 1.063 0.992952 39.51 42.68 7.3 7156. 1.137 0.995924 43.24 44.24 6.7 7210. 1.254 0.999392 42.05 45.41 9.9 7210. 1.254 0.999392 43.23 46.69 11.1 7270. 1.250 1.324 0.993843 44.56 48.13 1.3 7270. 1.457 1.410 0.993843 47.33 51.17 1.8 7290. 1.457 1.475 0.9948372 47.33 51.17 1.8 7310. 1.5c0 1.549 0.9948372 48.76 52.66 2.3 7310. 1.549 0.9948372 48.76 50.43 54.46 2.8 7310. 1.745 1.757 0.995695 52.57 56.77 3.8 7310. 1.920 1.923 0.96834 55.61 50.06 6.2 7350. 2.450 2.510 2.600 0.996835 66.76 72.13 1.9	E ;	7056.	0.595	1.002	100666-0	36.2H	41.34	6.354E-04
7156. 1.137 0.995524 40.94 44.24 8.7 7180. 1.190. 1.192. 0.999392 42.05 45.41 9.9 7210. 1.240. 1.254. 0.99324 47.56 48.13 1.3 7240. 1.240. 1.410. 0.994859 46.56 48.13 1.8 7270. 1.455. 1.410. 0.994859 45.18 49.81 1.8 7270. 1.457. 1.475. 0.994859 45.18 45.81 1.8 7310. 1.550. 1.549. 0.994532 48.18 51.17 1.8 7330. 1.549. 0.995535 48.75 52.66 2.8 7330. 1.755. 1.757 0.995634 52.57 56.46 2.8 7350. 1.923. 0.995634 55.57 56.77 3.8 7450. 2.028 2.049 0.9966525 66.77 3.8 7400. 2.049 0.9966525 66.76 66.27 3.9 7400. 2.050 0.9966525 66.76 2.5	14	7100.	0°0°	1.063	256246*0	39.51	45.68	7.334E-04
7180. 1-140 0.999392 42.05 45.41 9.9 7210. 1-260 1-254 0.99323 46.69 1.1 7210. 1-260 1-254 0.99324 46.56 48.13 1.3 7240. 1-475 0.99324 45.16 48.13 1.3 7290. 1-475 0.99329 45.16 49.83 1.6 7390. 1-540 0.994532 46.76 2.3 7330. 1-640 0.994534 52.6 2.8 7350. 1-75 1-640 0.996535 46.76 2.8 7350. 1-75 1-640 0.996535 46.7 5.6 2.8 7350. 1-920 1-923 0.966354 55.61 50.06 6.2 7350. 1-920 1-923 0.991655 57.57 56.77 3.8 7350. 2-170 2-25 2-25 2-25 2-25 2-25 7400. 2-36 2-36 2-36 <td>51</td> <td>7156.</td> <td>1.135</td> <td>1.127</td> <td>556.</td> <td>14.04</td> <td>44.24</td> <td></td>	51	7156.	1.135	1.127	556.	14.04	44.24	
7210. 1.256 1.254 0.992.093 43.23 46.69 1.1 2240. 1.324 0.997.941 44.56 48.13 1.3 7270. 1.410 0.993.94 44.56 48.13 1.3 7270. 1.475 0.993.92 47.33 51.17 1.8 7290. 1.475 0.996.372 47.33 51.17 1.8 7310. 1.520 1.549 0.996.372 48.76 52.66 2.3 7310. 1.745 1.959 0.996.395 52.57 56.77 3.8 7350. 1.745 1.923 0.966.394 55.61 60.06 6.2 7360. 2.026 2.026 2.049 0.991.655 66.27 1.2 7390. 2.450 2.510 2.600 0.990.276 65.60 74.69 2.5	9 !	7180.	1.150	1,192	656	45.05	45.41	9.9756-64
1240 1-320 1-324 0.997841 44.56 48.13 1.3 7270 1.455 0.9985972 45.16 49.83 1.6 7270 1.475 0.9985972 47.33 51.17 1.8 7290 1.550 1.475 0.996572 47.33 51.17 1.8 7310 1.550 1.549 0.996575 48.76 2.3 7350 1.745 1.923 0.966394 55.57 56.77 3.8 7370 1.920 1.923 0.966394 55.61 60.06 6.2 7350 2.026 2.049 0.977995 57.09 55.56 8.7 7370 2.049 0.991655 61.35 62.56 8.7 7400 2.450 2.510 0.991655 66.76 74.69 2.5 7402 2.510 0.996525 66.76 74.69 2.5	11	7210.		1.254	0.992193	43.23	46.69	
7270. 1.455 1.410 0.998572 45.16 49.83 1.6 7290. 1.560. 1.475 0.998572 47.33 51.17 1.8 7310. 1.560. 1.549 0.996575 48.76 52.66 2.3 7330. 1.675 1.640 0.996575 54.46 2.8 7350. 1.745 1.923 0.966394 55.57 56.77 3.8 7370. 1.920 1.923 0.966394 55.61 60.06 6.2 7350. 2.076 2.049 0.977995 57.93 62.56 8.7 7401. 2.450 2.510 0.991655 66.76 74.69 2.5 7402. 2.510 0.990276 66.60 74.69 2.5	18	7240	4)	٠	153265*0	44.56	48.13	1-3665-03
7290. 1.475 0.999372 47.33 51.17 1.8 7310. 1.569 1.549 0.994575 48.76 52.66 2.3 7330. 1.640 0.994575 48.76 54.46 2.3 7350. 1.745 1.757 0.966394 52.57 56.77 3.8 7370. 1.923 0.966394 55.61 60.06 6.2 7360. 2.026 5.049 0.977995 57.93 62.56 8.7 740. 2.450 2.510 0.991655 66.76 74.09 72.13 1.9 7402. 2.510 0.990276 65.60 74.69 2.5	5 1	7270.	*	•	9.48	45.18	18.54	1.609E-03
7316. 1.560 1.549 0.994575 48.76 52.66 2.3 7236. 1.475 1.640 0.994575 50.43 54.46 2.8 7350. 1.745 1.923 0.966394 55.61 60.06 6.2 7370. 2.026 2.026 2.049 0.977995 57.93 62.56 8.7 7390. 2.170 7.732 0.991655 66.76 72.13 1.9 7402. 2.610 2.600 0.990276 65.60 74.69 2.5	2	7290	.*	•	805	47.33	51.17	
7336. 1.675 1.0640 0.9950306 50.43 54.46 2.8 7350. 1.745 1.757 0.995695 52.57 56.77 3.8 7370. 1.920 1.923 0.966394 55.61 60.06 6.2 7360. 2.025 2.049 0.977995 57.93 62.56 8.7 7390. 2.170 7.732 0.991655 66.76 72.13 1.9 7402. 2.510 2.600 0.990276 65.60 74.69 2.5	21	7316.	u'	•	0.994575	48.76	52.66	2.310E-05
7350. 1.745 1.757 0.995695 52.57 56.77 3.8 7370. 1.923 0.966394 55.61 60.06 6.2 73E0. 2.025 5.049 0.977995 57.93 62.56 8.7 7390. 2.170 7.732 0.991655 61.35 66.27 1.2 740 2.450 2.510 0.990276 65.60 74.69 2.5	22	7336.	٠.	•	935646*0	50.43	54.46	80
7370. 1.923 0.966394 55.61 60.06 6 73E0. 2.024 5.049 0.977995 57.93 62.56 8 7390. 7.170 7.732 0.991655 61.36 66.27 1 740 2.450 2.510 0.996575 66.76 72.13 1 7402. 2.610 2.600 0.990276 65.60 74.69 2	53	7350.	۲.	1.757	0.495695	52.57	56.17	8
73E0. 2.324 5.049 0.977995 57.93 62.56 8 7390. 7.170 7.732 0.991655 61.35 66.27 1 74C0. 2.450 2.51C C.98555 66.7E 72.13 1 7402. 2.610 2.600 0.990276 65.60 74.69 2	. 24	7373.	¢.	•	•	55.61	\$0.0 \$	17
7390. 2-170 7-732 0.991655 61.35 66.27 1 740. 2-450 2.510 0.996575 66.76 72.13 1 7402. 2.610 2.600 0.990276 65.60 74.69 2	52	7350.	G	•	356LL6-0	57.93	62.56	
740. 2-450 2.51C 0.9885?5 66.78 72.13 1.9618-0 7402. 2.610 2.600 0.990276 68.60 74.69 2.5488-0	5 6	7390.	7	•	3.91.95	61.35	66.27	
• 2.610 2.600 0.950?76 65.60 74.69 2.548E-L	12	140.	4	•	6.996535		2	.961E-Û
	28	7402.	ç	•	0.950276	3.6	4	.54BE-€

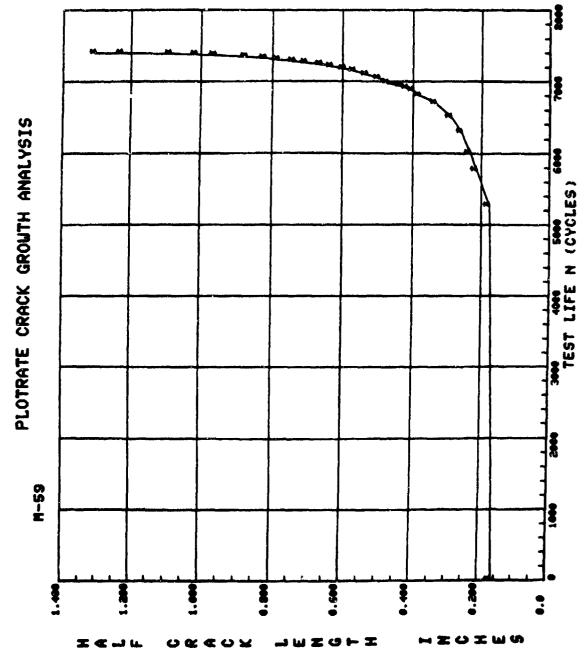


Figure 73. Crack growth curve for test M-59.

TABLE 72. DATA TARULATION FOR TEST M-60

SPECINEN NO.: H-60

			04/04	1-3755-06	1-4135-06	1-656E-06	2-232E-06	2-7795-06	3.175E-06	3.7696-06	4-415E-06	5-178E-06	6.3346-06	7-196E-06	8-113E-06	8.2506-06	1-1446-05	1-207E-65	1-309E-05	1-3746-05	1.547E-05	1-6428-05
			DELTA K	16.50	17.2	18.85	20.76	21.92	22°84	23.94	24.95	26.15	27.02	28.11	28.53	28-82	30.71	31,50	31.95	32.56	33.23	33.74
	.00 HZ.	•	K-MAX	5.50	5.9	6.20	6.92	7.31	7.61	7.98	8.32	0.71	9.01	9.37	2.51	19.6	10.24	10.50	10-65	10.05	11.00	11.25
AN= 0.0 18.	1EST FREG= 6.00		MULT. CORR. SOEFF	0.999838	0.996260	0.92676	0.994539	166966.0	0.999523	611266-0	0.997562	6698660	0.993944	0.994227	1440640	0-991529	0.991253	0.990468	0.993638	0.993644	0.995089	0.992705
N≈ 6.000 BM.			A (REGRESSION)	0.300	0.354	0.391	0-473	0.526	0.571	0.625	0.674	0.741	0°-190	0.852	0.877	0.854	1.006	1.057	1.065	1-123	1.166	1.199
.250 IN.	PMAX=	AMBIENT AIR	A THE ASURTO!	0.300	0.360	0.395	0-460	0.525	0.575	0.625	0.675	0.735	0.7%	0.6%	C. 865	0.910	0.0 8.0	1.065	1.065	1.125	1.160	1.200
N 6= 0.250		COND 1 1 1 UN:	CYCLES	ö	21000.	34250.	56000.	66300.	76060.	64000.	91000°	98000.	102500.	107100.	108612.	1100001	116000.	118055.	119254.	12048b.	122163.	123182.
CCT SPECIMEN	PRINE	ENVIRONMENT CONDITION:	9	_	~	m	•	un	4	7	«	•	9		21	13	*	15	91	17	9.	51

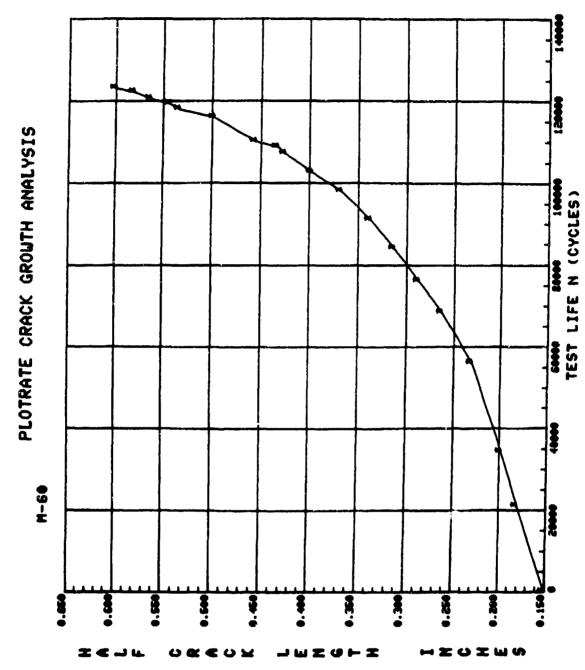


Figure 74. Crack growth curve for test M-60.

TABLE 73. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP IV-SIMPLIFIED FLIGHT SPECTRUM

		G-A-(G Step		nt St e p			
Test No.	Loading Profile	σ _{Max} Ksi	σ _{Min} Ksi	σ' Min Ksi	σ" Min Ksi	n ₁ Cycle	n ₂ Cycle	Comments
M-61 M-61a		20 15	-2 -2	4		25 25		Typical fighter, air-to-air o Lim = 40 Ksi ; 30 Ksi
M-62 M-62a		18	-4	4		20		Typical fighter, air-to-ground
M-63		14	-2	4		10		σLim = 40 Ksi & 30 Ksi Typical fighter, instrumentation
M-63a	İ	10	-2	4		10		and navigation ### Clim = 40 Ksi & 30 Ksi
M-64 M-64a	Max σ_{Min}	20 15	-3 -3	4		22 22		Typical fighter, composite mission
M-64b M-65	$\circ \frac{\sqrt{n}}{\sigma_{Min}}$	10	-3 -7.5	11.5		133		σLim = 40,30 & 20 Ksi Typical transport
M-66		16.8	-10.5	16.1		133		Typical transport
M-69	n ₁ n ₂ σ_{Max}	20	-2	6	8	20	40	Typical fighter, air-to-air
M-69a	Way or Min	12	-2	3	4	20	40	σLim = 40 Ksi & 30 Ksi
M-70	o Min	18	-4	6	8	15	30	Typical fighter, air-to-ground
M-70a		10	-4	3	4	15	30	σLim = 40 Ksi & 30 Ksi

TABLE 73. METHODOLOGY DEVELOPMENT TESTING PROGRAM GROUP IV SIMPLIFIED FLIGHT SPECTRUM (CONCL)

		G-A-G	Step	F1	ight S	teps					
Test No.	Loading Profile	σ _{Max} Ksi	σ _{Min} Ksi	ص Min Ksi	σ'' _{Min} Ksi	σ''' Min Ksi	n ₁ Cyc	n ₂ Cyc	n Cyc	n ₄ Cyc	Comments
M-71	n ₁ n ₂ σ_{Max}	14	-2	6	8		10	20			Typical fighter, instrumentation and navigation
M-72 M-72a M-72b		1 19	-3 -3	6 4 2	8 6 3		15 15 15	35			Typical fighter, composite mission $\sigma_{\rm Lim}^{\rm m} = 40,30,6,20$ Ks
M-74		16.8	-10.5	15.4	16.1		25	108			Typical transport
M-77	n ₃ n ₄ σ_{Max}	20	-3	-1	6	8	2	4	15	35	l '
:1-77a	n ₁ n ₂ W ~ ~ "' _M	ın 14	-6	1	4	6	4	8	20	40	σ _{Lim} = 40 Ksi & 30 Ksi
M-78	σ, σ" Min.σMin	18	-6	-1	4	8	4	8	20	40	Typical fighter
	n ₅ n ₄ σ_{Max}					σ''' σ' Min Max	n ₁ n ₅	n ₂ n ₆	n ₃	n ₄	
M-79		in 12	-7.5	-3.0	10	11.53.2	2	4	25	108	Typical transport
м-80	Min Min Max Min	16.8	- 10.5	-4.2	14	16.14.48	2	4	25	108	Typical transport

ABLE 74. DATA TABULATION FOR TEST M-6

SPECIMEN NO.: N-61 AIR TO AIR FIGHTER MAX STRESS = 20 KSI

PHINE		PMA X=		TEST FREG* 6.00 HZ	.00 HZ.		
ENVI RONMENT	ENVIRONMENT CONDITION:	AMBIENT AIR		:			
MO.	CYCLES	A (MEASUR LD)	A(REGRESSION).	MULT. CORR. COEFF	K-KAX	DELTA K	DA/ON
~	ċ		0.304	0.993863	13.83	22.13	7.5865-04
~	.000	-	0.322	0.996639	14.24	22.79	
m	2500.	0.350	0.356	0.997810	14.99	23.99	1-291E-05
•	5500.		0.451	0.998363	16.90	27.03	1-904E-05
sa.	6 500.		0.490	0.998902	17.62	28.20	2-142E-05
٥	7500.	0.535	0.537.	0.999290	18.45	29.53	2.4135-05
~	8 500.	0.545	0.584	092666-0	19.26	30.81	2.710E-05
40	9500.	0*9*0	0.643	0.998921	20.23	32.38	
•	10500.	0.705	202.0	0.998700	21.22	33.95	3-3676-65
2	11200.	0.160	0.752	0.997957	21.94	35.11	3-7326-65
	12000.	0.605	0.813	0.998133	22.85	36.57	4-1936-05
21	12800.	0.860	0.880	0.998120	23.41	38.10	4-950E-05
£ ;	13600.		0-962	0.999247	24.97	39.96	6-1236-05
	14100.	1-020	1.027	0.999221	22.86	41.37	7-022E-05
S	14600.	1.100	1.099	0.999623	26.82	42.91	7-0075-65
9 :	15100.		1.184	L06866*0	27.92	64.68	8.583E-US
~ ;	15500	1.260	1.257	0.998767	28.86	46-18	9-4335-05
2	15800.	•	1,310	0.289222	29.53	47.25	1-1495-04
6	16100.	1.365	1.378	0.991441	30.38	48.61	1-2735-04
02	16400	1-445	1.457	0.991647	31.37	50.19	1-4365-04
12	16700.	1.580	1.552	0.992069	32.53	52.05	1-6035-04
22	16900	1.615	1.623	0.9%426	33.40	53.45	1,7236-06
23	12106	7	1-691	0.992379	34.24	54.78	1-1135-04
*	17300	7	1.757	0.999582	35.04	26.06	2.0546-04
2	17500.	8	1.647	0.999726	36.14	57.82	2.4515-94
92	17700.	٠,	1.966	189866-0	37.35	59.76	2.9465-94
22	17900	2.070	5.069	0.099050	38.87	62-19	3-5675-64
27		7	<****	,,,,,,,,			

TABLE 74. DATA TABLILATION FOR TEST M-61 (CONC.L.)

DELTA K 69.12 93.72 14.71 78.57 89.34 71.61 84.66 K-MAX 43.20 44.76 46.69 49.11 50.76 52.91 55.84 58.5e 60.92 TEST FREG= 6.00 HZ. MULT. CORR. COEFF 0.997559 0.997124 0.995190 0.995564 0.996976 0,992799 0.998752 0.997656 AN= 0.0 AIR IG . IR FIGHTEP MAX STRESS = 20 KSI AIREGRESSION! W= 6.000 1N. 2.528 2.528 2.640 2.640 3.640 3.628 3.623 AMBIENT AIR A(MEASURED) 2.410 2.520 2.655 2.655 2.925 3.075 8.265 8.365 8.365 8.365 8.365 0.250 IN. EX XE ENVIRONMENT CONDITION: 4 18500. 18500. 18650. 18650. 18750. 18750. 19-1 18300. SPECIMEN MO. : SPECIMEN 58222252 3

04/04 5-858E-04 6-831E-04

8.275E-64 1.119E-03 1.364E-03

1.761E-03 2.382E-03 2.862E-03 3.557E-03

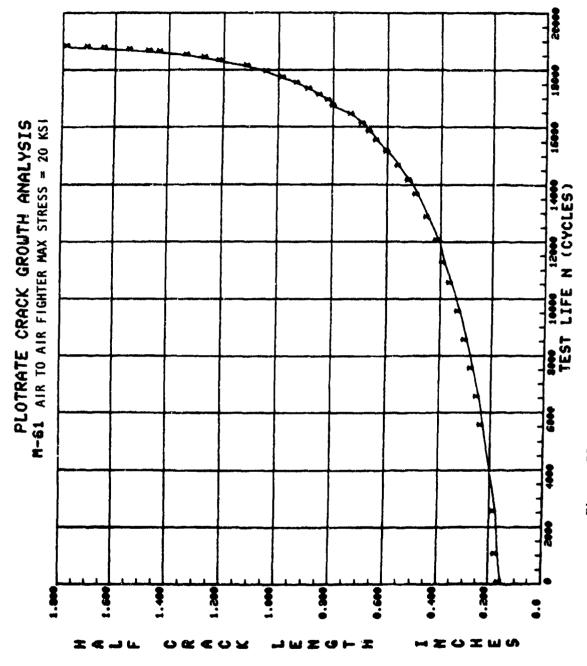


Figure 75. Crack growth curve for test M-61.

DATA TABULATION FOR TEST M-61A TABLE 75.

DELTA K 11.69 12.66 5.33 18.22 14.99 9.87 13-61 5.92 7.55 22.20 22.23 24-44 25.83 20.62 23.81 26.61 28.62 29.15 6.47 21.49 25-13 27.59 30.96 17.53 16.20 18.96 22.80 K-MAX 10.45 11.17 12.00 12.70 13.52 14-04 15.52 16.07 19.59 19.61 21.01 21,57 23.48 25.26 26.25 21.32 20.56 TEST FREQ= 6.00 HZ. 24.34 MULT. COKR. CUEFF 0.598174 0.997804 9198610 0.991713 0.962699 0.972593 02.5866*9 0.983134 0.947962 0-992302 648956"0 0.972365 996016-0 0.999889 9.984474 0.979496 0.973126 0.980270 0.999458 0.999819 998655-0 0.984361 0.999677 TYP FIGHTER AIR TO AIR, STRESS . 15 KSI MAX AN= 0.0 A (REGRESSION) H= 6.000 IN. 0.406 6.513 0.552 1.947 I.959 1.313 0.590 0.719 0-849 0.911 .452 1.870 2.265 2.203 1.14 1.546 0-453 0.778 1.645 1.754 AMBIENT AIR AIMEASURED.) 0-310 * 150 0.550 8 26.00 0.975 135 -130 315 .547 0.355 0.402 0.562 9.615 0-645 0.12 0-645 225 0.455 0.789 0.250 IN. PRAXE ENVIRONMENT CONDITIONS ä H-61A 35500. 26700. 36700. 36600. 26 500. 28408. 30500. 32300. 43300. 11306. 41500. 42400. 1500D 5700-CYCLES 502 SPECIMEN 25.3 CCT. SPECIMEN 20 2 -

1.0706-05 1.245E-05

-420c-05 .643t-05 +3236-05 2.383E-05

2 .9 336-06 1-267E-00 5-805£-uo •69¢E−06 8 . c 4- E-66 9-55E-06 -866E-05

2-448E-05 2-614E-05 2.676E-05 2.833E-05

3.102E-35 5.293E-ú

4.4 B4E-05 5.232E-05

5.007E-05 5-8 29E-05 1-310E-05 .934E-ù5 8-797F-65

28-12

0.995949

2-075

28.22

TABLE 75. DATA TABULATION FOR TEST M-61A (CONCL)

52.09 38.62 39.65 50.81 42.08 43.15 54.95 57.19 59-01 61.23 63.56 35.35 36.35 45.97 37.47 15.56 50.25 65.68 31.19 32.07 33.06 34.06 4.9 38.08 39.32 40.56 41.84 45.96 44.34 20.46 TEST FREQ# 6.00 HZ. 84"85 52.12 54.02 56.08 57.95 37.13 10-31 MJLT. CORK.. COEFF 0.997574 AME . 0.0 . . 1M. 0.999767 0.999704 0.999446 0.999800 0.998274 0.999832 0.997755 0.999593 0.999187 0.998117 **F3E866-0** 0.99969.0 12186-0 0.995746 0.997712 170666"0 0.999321 0.99764¹ TYP FIGHTER AIR TO AIR. STRESS . 15 KSI MAX A (REGRESSION) ME 6.000 IN. 2.285 2.376 2.477 2.579 2.764 2.867 3.059 3.163 3-352 3-452 3.648 3, 730 3.848 3.942 4.062 2.952 3.265 3.566 AMBIENT AIR A (MEASURED) 2-260 2.475 2.575 2-955 3.060 3.645 3-846 3-935 4-035 2.765 3-355 3.555 3-16 3.260 3.450 0.250 IN. PMAX= ENVIRONMENT CONDITION: #191X ä CYCLES 49270. 50462. 51077. 51253. 51722. 19636. 50257. 50919. 51530. 51012. 51913. 52033. 51400. 51626. 51867. 51967. 19960. 52003. 52057. 52073 SPECIMEN NO.: SPECIMEN ##IKd 133

3.867E-04 4.434E-04

3-388E-04

2-656E-04

2.937E-04

1.676-04 1.8716-04 2.0946-04

1-460E-04

6.095E-04 7.460E-04

8-785E-04

5-096E-04

1.036E-03 1.290E-03

-62BE-63

2-0116-03 2-4026-03 3-0556-03

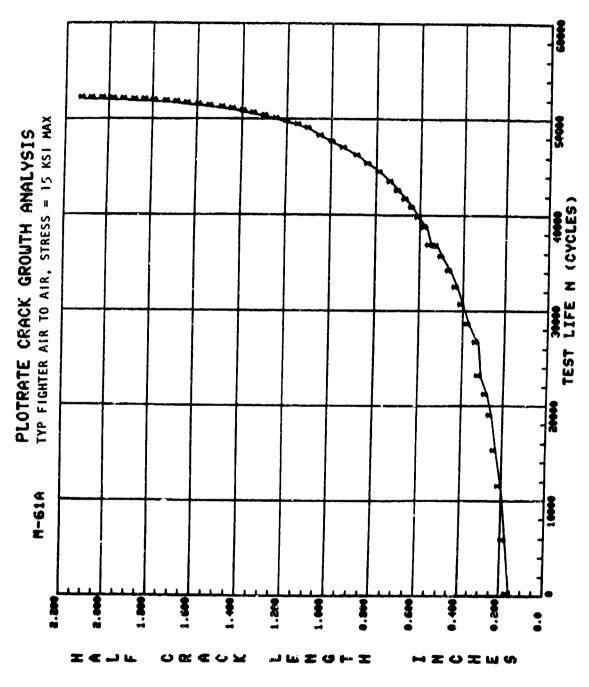


Figure 76. Crack growth curve for test M-61A.

TABLE 76. DATA TABULATION FOR TEST M-62

TYPICAL FIGHTER, AIR-TO-GROUMD, MAX STRESS = 18 KS!

SPECIMEN NU.: M-62

A (REGRESSION) MULT, CORR, COEFF K-MAX DELIA K DAVIDA CO. 999982 12.17 14.87 8.5382-06 0.999982 12.17 14.87 8.5382-06 0.999982 12.17 14.87 8.5382-06 0.999984 14.48 11.79 1.277E-05 0.999924 14.48 11.79 1.277E-05 0.999924 15.54 18.99 1.5662-05 0.471 0.999924 15.54 18.99 1.5662-05 0.471 0.999924 15.34 22.05 2.362-05 0.683 0.999321 18.34 22.05 2.376-05 0.683 0.999321 18.34 22.05 2.376-05 0.683 0.999924 18.34 22.05 2.43 2.776-05 0.999925 22.05 22.05 2.43 2.776-05 0.99925 0.99925 22.05 22.05 2.43 2.776-05 0.99927 22.05 22.05 22.05 2.43 2.776-05 0.99927 22.05 22.05 22.05 2.43 2.726-05 0.99927 22.05 22.05 22.05 2.43 2.726-05 0.99927 22.05 22.05 22.05 2.43 2.726-05 0.99927 22.05 22.05 22.05 22.05 2.43 2.726-05 0.99927 22.05 22.05 22.05 22.05 2.436-05 1.209 0.99927 22.05 22.05 22.05 22.05 22.05 22.05 22.05 22.05 1.2092-05 1.2092 22.05 22.05 22.05 1.2092-05 1.2092 22.05 1.2092-05 1.2092 22.05 1.2092-05 1	
0.999982 12.17 14.87 14.87 0.999984 13.36 13.36 18.33 10.999984 14.48 17.10 0.999984 15.54 18.20 19.80 0.999824 15.20 19.80 19.80 0.9998341 17.14 20.95 0.996316 18.04 22.97 24.43 0.998642 23.44 22.05 23.74 20.998924 22.05 23.45 22.05 20.998924 22.05 23.45 22.05 20.998924 22.05 22.05 20.998924 22.05 22.05 20.998924 22.05 22.05 20.998924 22.05 22.05 20.998924 22.05 22.05 20.998924 22.05 22.05 20.998924 22.05 22.05 20.998924 22.05 20.999240 22.05 20.999240 22.00 20.999240 22.0	JENT AIR Asured)
0.999978 13.36 16.33 0.999844 14.48 17.70 0.999674 16.20 19.90 0.999619 18.04 22.97 0.999666 19.42 22.97 0.999666 19.99 24.43 0.999666 19.99 26.43 0.999666 22.42 22.97 0.999666 22.42 22.97 0.999666 22.42 22.94 0.999666 22.42 23.40 0.999666 22.42 31.96 0.999667 22.61 32.41 0.999673 22.92 26.61 33.51 0.999673 22.92 34.41 0.999660 31.01 37.90 0.999661 33.01	0.290
0.99924 15.54 18.99 0.999526 15.54 18.99 0.999534 17.14 20.95 0.9996424 18.04 22.93 0.99966426 19.99 24.43 0.99966426 21.47 22.97 0.99966426 22.05 26.43 0.999754 22.05 22.99 0.999754 22.05 22.99 0.999754 22.05 22.99 0.999754 22.05 22.99 0.999754 22.05 22.99 0.999754 22.05 22.99 0.999755 22.05 22.05 22.99 0.999755 22.05 22.05 22.99 0.999755 22.05 22.05 22.99 0.999675 22.05 22.05 22.99 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 22.05 22.05 22.05 0.999675 23.49 0.999675 23.49 0.999675 23.49	0-350
0.999526 15.54 18.99 0.999474 16.20 19.90 0.9994174 11.14 20.95 0.996316 19.99 22.97 0.995005 19.99 22.97 0.995005 19.99 22.443 0.995426 21.47 26.26 0.9994754 22.05 22.96 0.9994754 22.05 22.96 0.9994754 22.05 22.96 0.9994754 22.05 23.46 0.9994754 22.05 23.46 0.9994754 22.05 23.46 0.9994754 22.05 23.46 0.9994754 22.05 23.46 0.9994754 22.05 23.46 0.9994754 22.05 33.96 0.999573 29.92 31.96 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92 0.9995745 29.92 0.999573 29.92 0.999573 29.92 0.999573 29.92	
0.999474 16.20 19.80 0.9994341 17.14 20.95 0.996316 18.04 22.05 0.995005 19.99 0.992956 20.93 25.58 0.9994754 22.05 26.24 0.9994754 22.05 26.24 0.9994754 22.05 26.24 0.9994754 22.05 26.24 0.9994754 22.05 28.67 0.9994754 22.05 28.67 0.9994754 22.05 31.06 0.9994754 26.15 31.06 0.9994754 26.15 31.06 0.9994754 26.15 31.06 0.9994754 26.15 33.51 0.999573 29.92 34.41 0.999573 29.92 38.51 0.999573 29.92 38.51 0.999573 32.20 39.36 0.999642 33.49 40.93	٠
0.999341 17.14 20.95 0.99619 18.04 22.05 0.996366 19.42 23.74 0.992956 19.99 24.43 0.992956 21.47 22.95 0.992754 22.05 22.65 0.992754 22.05 22.65 0.992754 22.16 22.65 0.992754 22.16 22.65 0.992754 22.16 22.65 0.992755 24.13 29.50 0.992755 24.13 29.50 0.992755 24.13 29.50 0.992755 24.13 29.50 0.992755 24.13 29.50 0.992755 24.13 32.95 0.992755 24.13 32.95 0.992755 24.13 32.95 0.992755 24.13 32.95 0.992755 24.13 32.95 0.992755 34.41 0.992755 33.42 0.999573 29.92 34.41 0.999573 32.20 34.95 0.999642 33.49 0.999642 33.49 0.999642 33.49	•
0.99619 18.04 22.05 0.996316 19.42 23.74 0.99666 19.42 23.74 0.992956 20.93 25.58 0.996754 22.05 26.95 0.9969754 22.05 28.64 0.9969754 22.05 28.65 0.9969754 26.13 29.50 0.9969754 26.15 31.06 0.996762 28.64 35.01 0.996762 28.64 35.01 0.996762 28.64 35.01 0.996762 28.64 35.01 0.996762 31.06 0.996762 38.64 35.01 0.996762 38.64 35.01 0.996762 38.64 35.01 0.996762 38.64 35.01 0.996762 38.64 35.01 0.996762 38.64 35.01 0.996762 38.64 35.01 0.996762 38.64 35.01 0.999662 32.20 34.90	0.570
0.996566 19.42 22.97 0.995005 19.99 24.43 0.992956 20.93 25.58 0.996426 21.47 22.26 0.996172 22.05 22.05 26.96 0.996172 22.76 21.82 0.996127 22.76 21.82 0.996127 22.46 20.41 0.996127 22.66 13 29.50 0.996156 26.15 31.06 0.996156 26.15 31.06 0.996157 26.81 32.77 0.996150 29.92 0.996150 29.92 0.996150 29.92 0.996162 28.16 34.41 0.999260 31.01 37.90 0.999662 33.01 37.90 0.999662 33.01 37.90 0.999662 33.01 37.90 0.999662 33.01 37.90 0.999662 33.01 37.90	0.630
0.995055 19.99 24.43 0.995005 19.99 24.43 0.995026 21.47 25.58 0.999172 22.05 25.56 0.999172 22.05 25.56 0.999172 22.76 27.82 0.999154 22.76 27.82 0.999155 24.13 29.50 0.999155 24.13 29.50 0.999155 24.13 29.50 0.999156 25.15 31.96 0.999157 26.15 31.96 0.999157 26.15 31.96 0.999157 28.46 35.01 0.999157 39.50 0.999157 39.92 0.999157 39.92 0.999157 39.92 0.999157 39.92 0.999157 39.92 0.999157 39.92 0.999157 39.92	•
0.995005 19.99 24.43 0.992956 20.93 25.58 0.996426 21.47 26.24 0.996927 22.76 27.82 0.996927 23.46 28.67 0.996927 24.13 29.50 0.996150 24.13 29.50 0.996150 25.42 31.96 0.99654 27.42 33.51 0.99654 27.42 33.51 0.99654 27.42 33.51 0.99654 27.42 33.51 0.99956 27.42 33.51 0.99956 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51 0.99966 27.42 33.51	٠
0.992956 20.93 25.58 0.996426 21.47 26.24 0.999172 22.05 26.96 0.999174 22.76 27.82 0.999154 22.76 27.82 0.999155 24.13 29.50 0.999150 24.13 29.50 0.999150 24.13 29.50 0.998150 25.42 31.96 0.998242 26.15 31.96 0.998242 28.41 32.77 0.998246 27.42 33.51 0.999260 31.01 37.90 0.99968 32.20 34.41 0.99968 32.20 34.90	0-7-0
0.999426 21.47 26.26 0.999172 22.05 26.96 0.999154 22.76 27.82 0.998324 24.13 29.67 0.998324 24.13 29.60 0.998150 25.42 31.06 0.99854 26.15 31.96 0.99854 26.15 31.96 0.99854 27.42 33.51 0.99965 28.64 35.01 0.99966 32.20 34.41 0.99966 32.20 34.90 0.99966 32.20 34.90	0.830
0.999172 22.05 26.96 0.999754 22.76 27.82 0.999754 22.76 27.82 0.999752 23.46 29.67 29.67 0.999324 24.13 29.50 0.999150 25.42 31.06 0.998242 26.15 31.96 0.999462 28.44 35.01 0.999260 31.01 37.90 0.999662 28.44 35.01 0.999260 31.01 37.90 0.999662 28.44 35.01 0.999662 28.44 35.01 0.999662 28.44 35.01 0.999662 28.44 35.01 0.999662 28.44 35.01 0.999662 28.44 35.01 0.999662 28.44 35.01 0.999662 32.20 39.36 0.999662 35.49 40.93	380°O
0.999754 22.76 27.82 0.998324 24.13 29.67 0.998324 24.13 29.50 0.998150 25.42 31.06 0.99854 26.15 31.96 0.998654 27.42 33.96 0.99962 28.46 35.01 0.99962 28.64 35.01 0.99968 32.20 34.90 0.99968 32.20 34.90	0.430
0.996927 23.46 28.67 0.998324 24.13 29.50 0.997952 24.88 30.41 0.99854 26.15 31.96 0.99876 27.42 33.51 0.99876 27.42 33.51 0.99876 27.42 33.51 0.99876 27.42 33.51 0.99976 27.42 33.51 0.99976 27.42 33.51 0.99976 27.42 35.01 0.99976 27.42 35.01 0.99976 27.42 35.01 0.99976 27.42 35.01 0.99976 27.42 35.01 0.99976 27.42 35.01	0.985
0.998324 24.13 29.50 0.997952 24.88 30.41 0.998150 25.42 31.06 0.99854 26.15 31.96 0.99876 27.42 32.77 0.99876 27.42 33.97 0.999762 28.16 34.41 0.999762 28.64 35.01 0.999764 32.20 34.50 0.99968 32.20 34.90	
0.997952 24.88 30.41 0.992150 25.42 31.06 0.99854 26.15 31.96 0.99876 27.42 33.51 0.99876 27.42 33.51 0.999762 28.16 34.41 0.999762 28.64 35.01 0.999768 32.20 34.90 0.99968 32.20 34.90	301-1
0.999150 25.42 31.06 0.99854 26.15 31.96 0.998767 26.61 32.77 0.998762 26.61 33.51 0.999762 28.64 35.01 0.999573 29.92 36.57 0.99968 32.20 39.36 0.999642 35.08	1-155
0.99854 26.15 31.96 0.998767 26.61 32.77 0.998767 27.42 33.51 0.999462 28.16 34.41 0.999462 28.64 35.01 0.999573 29.92 36.57 0.999688 32.20 39.36 0.999642 35.20 39.36	1-210
0.998767 26.61 32.77 0.998242 27.42 33.51 0.999462 28.16 34.41 0.999573 29.92 36.01 0.999588 32.20 39.36 0.999461 33.49 40.93	1.270
0.998954 27.42 33.51 0.999462 28.16 34.41 0.999462 28.64 35.01 0.999260 31.01 37.90 0.999461 33.49 40.93 0.999642 35.08 42.88	1.335
0.999242 28.16 34.41 0.999462 28.64 35.01 0.999260 31.01 37.90 0.999461 33.49 40.93 0.999642 35.08 42.88	1.385
0.999462 28.64 35.01 1 0.999573 29.92 36.57 1 0.999260 31.01 37.90 1 0.999461 33.49 40.93 2 0.99942 35.08 40.93 2	1.445
C. 999573 29.92 36.57 1 0.999260 31.01 37.90 1 0.99968 32.20 39.36 1 0.99964 33.49 40.93 2 0.99945 35.08 42.88 2	•
0.999240 31.01 37.90 1 0.99968 32.20 39.36 1 0.999461 33.49 40.93 2 0.99642 35.08 42.88 2	•
0.99968 32.20 39.36 1 0.99961 33.49 40.93 2 0.999642 35.08 42.88 2	1.715
0.999461 33.49 40.93 2 0.999642 35.08 42.88 2	
076 0.999642 35.08 42.88 2	1.930
	2.065

TABLE 76. DATA TABULATION FOR TEST M-62 (CONCL)

			JA/WA 3-008E-04	3.4246-04	3.056t-04	4-273E-04	4-7056-04	5-704-0-	6.2956-64	7-647E-04	9.650t-C4	1.2114-03	1-136E-03	60-376-7	43/11/40	CD_3C79*7	2-3435-03	4-2224-05
			DELTA K	12.3	49.80	49.95	51.78	52.74	24.3%	56.47	59.31	63.15	49.64	40.4		11.31	14.20	10.10
	.00 HZ.		K-MAX	38.27	39.93	40.90	41.96	43.15	44.46	46.20	48.53	51.76	944		20.43	55.40	60.7E	63.41
IX STRESS = 18 KS!	AN= 0.0 IM. 1EST FREQ= 6.00		MULT. CORK. COEFF	(1.69624)	322566-0	0.599206	0.999127	0.599112	25.858.2	0.498482	0.997504	720260	E (3697 0	0.44361	0.58 / 450	0.999161	0.4544.0	0.99951
FIGHTER, AIR-TO-GROUND, MAX STRESS = 18	M= 6.000 3N.		A (RF GRESSIUN)	25.5	2.538	2,530	2,665	750	644	999	2000	U 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	200.00	2000	3.664	3-743	928-5	4.005
TYPICAL FIGHTER	b= 6.25C 3N. PMAX=	AMBIENT AIR	A (MEASURID)	2-27-5	Cr. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.		067 6	012-1		200	0467	2. L.S	00 mm	3.5%		3.725	4. B. A.	4.0.0
ž + * :		COMBITION:	CYCLES	23900-	24100.	24360.	90467	-m)C+7	24000	24.700-	-0024	24400	2.000	25063	25100	26120	24146	2516
SPECIMEN NU.:	CCT SPECIMEN	ENVIRONMENT CONDITION:	NC.	56	30 2	20	75	33	*		36	37	u, œ	9.0	4		; ;	' (°

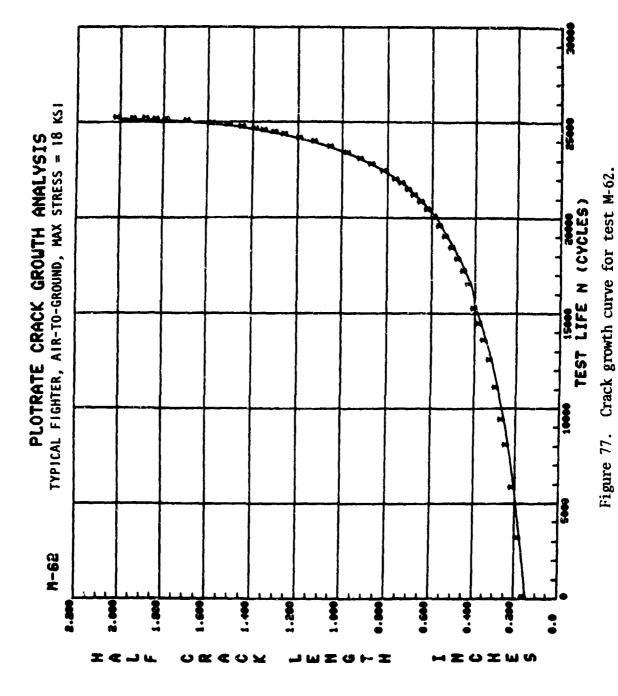


TABLE 77. DATA TABULATION FOR TEST M-62A

TYP FIGHTER AIR TO GROUND. STRESS = 14 KSI MAX SPECIMEN NO.: N-62A

1							
		PMAX=		TEST FREG.	6.00 HZ.		
ENVIRONNENT	COMDITIONS	AMBIENT AIR			:		
ğ	CYCLES	A (MEASURED)	AIREGRESSION	MULT. CORR. COEFE	E-KAX	DEATA K	DA/OM
, (ô		0.460	161966-0	11.55	15.36	4.721E-06
~	5700.	0.530	0.523	0.997571	12.74	16.38	6 -535E-06
m	5200	25.0	0.578	0.978279	13.41	17.25	7-955E-04
•	12500.	0.630	0.629	0.998589	14.01	10-01	40-30C 0. 6
so ·	15300.	0.685	209-0	902966-0	14.60	10.74	9.924F-04
•	18000.	0-740	0.752	0.999823	15.25	19-61	1.041 5-05
-	20250.	0.793	0.790	0.999358	15.75	20.20	1-856-05
•	22690.	Ġ	0.847	991666-0		21.01	1.2856-05
•	24661.	9	0.69E	0.999341	16.85	21.46	1.4326-05
<u>.</u>	2742	٠,	0.949	0.999945	17.35	22.31	1-507E-05
1	28106.	1-005	1.005	0.999792	17.89	23.60	1-7465-05
21	29367	1.052	1.051	0.299097	18.32	23.56	1.992E-05
£1	31000.	1.115	1.120	0.997676	16.95	24-38	2-1376-05
* *	32354		1-161	695266-0	19.52	25.10	2-367E-05
·	3332B-	1.238	1.228	0.99746	19.94	25.65	2.377E-05
9 !	34058	N I	1.293	0.997166	20.53	26.39	2.525E-05
	35246.	1.325	1.322	0.997387	20.78	26.71	2.5596-65
•	-07505	7	1.372	0.996218	21.24	27.31	2.760E-05
2 (31303	•	1.430	0.957790	21.12	27.93	3-207E-05
D :	38225	•	1.491	0.999338	22.25	28.61	3.5726-05
17	39273	v.	1-576	0.997861	22.98	29.54	3-944E-05
22	46373.	•	1.676	0.998447	23.76	30.54	4-322E-05
£2	+1420	1.775	1.767	0.997939	24.61	31.64	4-7705-45
*2	42615.	?	1.679	0.997627	25.57	32.47	5-280F-05
\$2	43550	1.967	1.975	0.998280	26.40	33.94	6-D89E-05
92	**274	9	2.064	0.999561	27.16	34.92	6-9215-05
22	45010.	2-165	2.172	0.999357	28.11	36.14	1-037E-05
2	45556	540 C	776 6				

DATA TABULATION FOR TEST M-62A (CONCL) TABLE 77.

1-0486-04 9-2026-64 1-1866-63 1-330E-04 1-662E-34 5.331E-64 1-445E-03 2.357E-04 2-71115-04 2.982E-CA 3.617E-04 \$-366E-06 \$ -367c-ù4 DELTA K 38.28 39.52 50.50 42.43 44.11 45.64 46.96 48.42 49.62 51.92 54.00 55.79 57.62 41.79 59.33 61.69 64.20 66.46 68.55 70.79 31.50 32.50 30.48 36.60 40.38 42.00 43.39 30.74 34.31 35.50 **46.13** 47.96 69.93 51.**\$**4 53.32 55.06 TEST FREG= 6.00 HZ. 14.11 33.39 MULT. COKR. COEFF 0.999469 TYP FIGHTER AIR TO GROUND, STRESS = 14 KSI MAX 0.999848 0.999432 0.998380 0.996506 0.959467 0.999462 009666-0 0.999166 0.997826 0.999114 0.997314 0.994942 153666.0 215566-0 AN= 0.0 A (REGRESSION) WE 6.000 IN. 2.465 2.546 2.651 2.742 2.833 2.946 3.039 3.227 3.374 3.499 3.603 3.787 4.015 3.700 3.902 4.107 AMBIENT ATR A (MEASURED) 2-255 2.550 2.740 2.835 2.945 3-040 2.650 3.500 3.6% 3.485 D= 0.750 IN. PHAX= ENVIRONMENT CONDITIONS H-62A 48712. 49114. 49228. 49319. 49461. 48137-44.895. 48345. 47566. 19389. 46557. 1960 SPECIMEN NO.: CCT SPECIMEN 202222222222 24444 363 HILL

-135c-64

2-4964° るという

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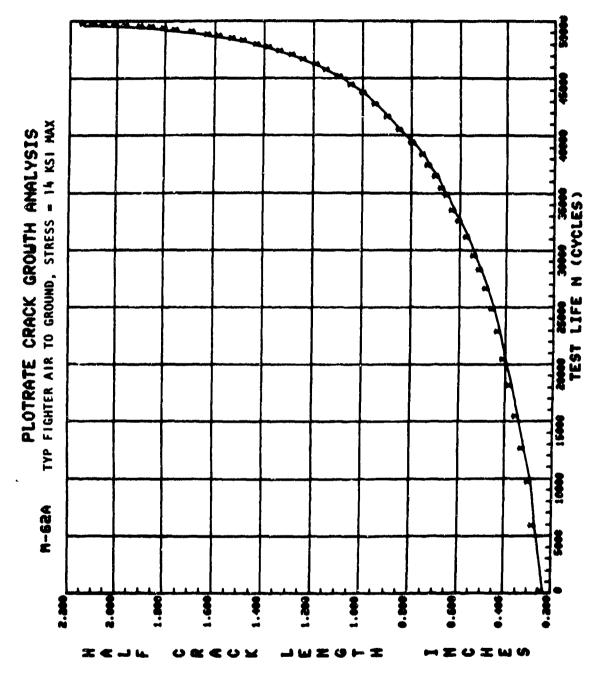


Figure 78. Crack growth curve for test M-62A.

DATA TABULATION FOR TEST M-63 TABLE 78.

	CCI SPECINER 6= 0	0.250 IN.	M= 6.000 IN.	AN= 0.0 IN.			
PHIN=		PMAX=		TEST FREQ. 6	6.00 HZ.		
EWIRONNENT	CONDITION:	AMBIENT AIR					
.	CYCLES	A (MEASURFD)	A(REGRESSION)	MULT. CORR. COFFF	K-MAX	DELTAK	40746
-	ċ	0.313	0.312	0.9999	9.82	- 4	3.2401-04
~	6350.	0.355	0.352	0.997616	10.43	12.17	3644.6
•	13000.	0.405	0.401	0.997158	11.15	13.00	4-72F-06
*	18750.	0.4.0	0.458	0.997603	11.92	13.90	5-595E-06
ĸ	22500.	0.500	0.500	0.999016	12.46	14.54	6-434E-06
-	25,900.	0.550	6.565	0.997646	13.02	15.19	7-6%E-06
-	29300.	0.600	0-602	517766-0	13.76	15.98	8-828E-06
•	32350.	0.650	0.657	0.996153	14.33	16.72	90-308-6
•	74500.	6.710	102.0	0.996314	14.01	17.28	1-101E-05
01	36900-	0.755	0-756	0.996341	15.42	17.99	1-2136-05
	38850	0.00	0.807	0.996296	15.94	19.59	1.3176-05
77	10600		168-0	0.998946	16.39	19,11	1-455E-05
ET :	42600.		0.914	0.998164	17.01	19.61	1.5936-05
1	£100.	0.960	0.962	0.997718	17.48	20.30	1.7625-05
57	45200	1.010	1.002	0.997228	17.86	50°94	1-0436-05
2:	4100	1.030	1-037	0.997264	18-19	21.23	1.936E-65
2	47100	070-1	1.075	0.995295	18.55	21.64	2-0956-05
	813	1.115	1.116	0.997713	10.93	22,04	2.231E-65
	-2014	1.160	1-164	0.996410	19.37	22.40	2.5606-05
2:	50100	1.23	1.215	0.999243	19.63	23.13	2-677E-05
12	21100	1.270	1.273	0.99501	20.35	23.74	2.908t-05
22	52100	1.335	1.334	0.999555	20.01	24.36	3-097E-05
£2	53560.	1.430	1.427	0.99656	21.70	25.32	3-402E-05
52	8	7.460	19491	0.996720	21.99	25.66	3-661E-05
Q:	55100	1.535	1.537	0.995082	22.45	26.42	3-9456-65
2	26100	1.615	1-621	0.0000	23.36	27.26	4.246-05
27	57.00.	1.720	1.709	0.996733	24.11	24.13	4-764F-05

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TABLE 78. DATA TABULATION FOR TEST M-63 (CONCL)

, MAX STRESS = 14 KSI
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HAVIGATION
₹
INSTRUMENTATION &
FIGHTER,
TYPICAL FIGHTER, 18
7
SPECIMEN ND. 3

CCT SPECIMEN		RE 0.250 IN.	W= 6.000 IM.	AME O.O. IN.			
PRIN-		PMAX=		TEST FREG= 6.00 HZ	.00 HZ.		
ENTRONENT	WIRDWENT CONDITION:	AMBIENT AIR					
M	CYCLES	A LINEASUR ED)	AIREGRESSION	MULT. COKR. COEFF		DELTA K	0 V C#
2	59100.	1.905	1.911	0.998224	25.85	30.15	6-1076-05
2	-00104	2-040	2.032	0.999272		31.36	7.2506-05
3	+1100.	3.100	2.179	0.997905		32.86	9-1705-05
32	62100.	2.370	2-355	0.993748		34.76	1-2445-04
2	63166.	2.605	2.585	0.974366		37.88	1.9275-04
34	64100.	2,940	3.001	0.961186		45.00	2,9036-04
35	. 20169	3.485	3.670	0.986771		51.77	4.5296-04
*	65600.	4.205	4.188	0.991253		62-12	6.430E-04

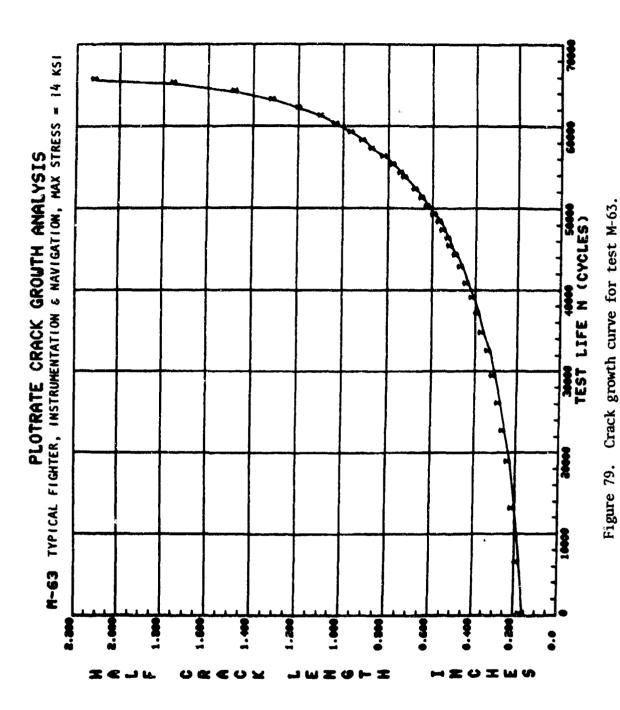


TABLE 79. DATA TABULATION FOR TEST M-63A

TYP FIGHTER INSTR & NAVIGATION, STRESS = 10 KS! MAX

M-63A

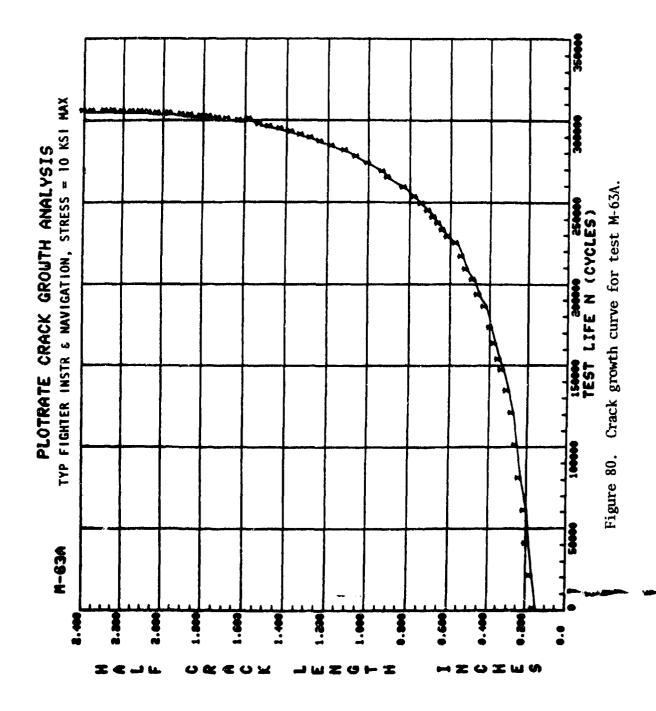
SPECIMEN NO.:

5.598E-06 6.028E-06 1-120E-05 6-766E-06 6-763E-06 1.621E-06 2.219E-06 2.4 SOE-04 3-178E-06 -580E-06 4-100E-06 1-114E-06 .020E-06 .132E-06 2-164E-06 3.395E-06 4-74BE-06 5.319E-06 -297E-06 .950E-06 -786E-07 A25E-07 -323E-06 .943E-06 -641E-66 -260E-06 3-1656 8.66 14.32 15.29 16-42 9.59 10.06 0.59 11.20 11.64 12.46 12.96 13.89 14-90 17.18 17.62 17.97 8.38 20.19 21-10 2-11 8.62 15.80 16.75 19.37 8.39 9.70 7.21 .59 8 9.34 10-13 10.11 11.00 11.50 11.94 12-42 13.17 13-69 14.31 14.68 15.32 15.68 10.38 12.74 13.96 14.97 17.58 16-14 16.63 TEST FREQ= 6.00 HZ. MULT. CORR. COEFE 0.999878 AME. 0.0 . IM. 0.997254 0.987462 0.994940 0.935240 0.992748 0.996665 0.997538 0.998134 910166+0 0.997470 0.994629 0.993882 0.984401 0-988194 0.992630 0.955344 0.999150 2969 165 0.995985 0.995154 0.996231 0-999605 **768966**~0 A (REGRESSION) NE 6.000 1N. 0.365 0.405 0.492 0.549 9.544 0.676 0.718 0.833 1.000 J. 142 1.184 1-239 .297 1.396 1.343 1.858 0.45 0.592 192.0 0.952 1-63 1. 531 72. 0-864 .457 AMBIENT AIR A (ME A SURED) 0.370 0.345 .015 0.495 0.660 0.765 0.890 300 .115 82. .25 385 .536 0.335 -250 94. .635 0.4.0 0.5% 0.543 0.640 0.725 0.825 0.945 8= 0.250 IN. PMAX= ENVIRONMENT CONDITION: **\$**0000 20000. 9000 201700. 224000-48000 40000 1465E2. 162400. 72360. 185000. 192600 208000. 216060. 236000 33700. 53000 58000. 232000. 240000. 25.2000 **60000** 20000 228000, 244000 68000 SPECIMEN PHIME CCI

TABLE 79. DATA TABULATION FOR TEST M-63A (CONCL)

TYP FIGHTER INSTR & NAVIGATION, STRESS = 10 KS! MAX SPECIMEN NG.: M-63A

		FHAX=		TEST FREQ= 6.00 HZ	-00 HZ-		
HVIRONNENT	ENVIRONMENT COMDITION:	AMBIENT AIR					
NO.	CYCLES	A (MEASURED)	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	DAZDM
58	273000.	1.960	1.984	6.996578	16.91	•	1.406t-05
30	277000.	2.100	2.093	0.998973	19.58	23.50	
31	280500.	2.210	2.218	0.999616	20.36	24.44	1-627E-05
32	283650.	2-335	2.335	0.999749	21.11	25.33	2-0456-05
33	286191.	2-445	2.442	0.999863	21.81	26.17	2.250E-05
*	281429.	2.542	2.547	9986660	22.51	27-01	2-439E-65
35	290164.	2.635	2.632	0.999564	23.08	27.70	2.654E-07
36	292053.	2-735	2.734	0.999455	23.79	28.55	2.952E-05
75	293828.	2.835	2,656	0.989513	24.67	29.61	2-766E-05
38	295336.	v	2.9%	0.956753	25.40	30.48	2.946E-05
3 6	2%264.	9	3.036	0.916203	26.03	31.23	3.396E-05
90	289919.	_	3.302	0.660135	26.21	33,85	4.837E-05
**	296998.	3.240	3. 191	0.676046	27.27	32.13	5-4268-05
45	300017	3.358	3-306	0.876150	28 ° 52	33.89	6.199E-05
43	300628.	•	3,390	0.668521	28.99	34.78	7-412E-05
‡ !	301325.		3-532	0.996721	30.31	36.37	7.350E-05
*	301876.	3-665	3-611	0.948765	31.09	37.31	8-192E-05
*	302962	3.716	3.708	151666-0	32-09	36.50	9.636E-05
14	302891.	3.792	3, 792	0.999460	33,01	39.61	1.093E-04
9	363459	3.917	3.926	0.999296	34.50	41.47	1.312E-04
64	303832	4.032	4-026	0.998022	35.41	42.97	1.576-54
2	304163.	4.125	4.135	0.598159	37.28	44.73	1-365E-04
15	304361.	4-206	4-209	2591660	38 . 34	46.03	2-153E-04
52	364529	4-290	4.279	0.998412	39.39	47.27	2-466E-04
53	364751.	4.387	4.396	7 E6 3 650	41.32	49.56	3-2575-04
3	304889.	4-480	4-486	0.992388	45.94	51.52	4-195E-04
52	305004	4.570	1.584	0.996416	44.64	53.61	5-29BE-04
74							



DATA TABULATION FOR THST M-64 TABLE 80.

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16.13 18.93 19.66 22.19 27.15 26.44 29.30 30.38 31.54 21.21 24.62 32.17 32.91 35.24 36,16 36.92 34.43 33.64 38.46 16.46 17.10 17.81 14.03 16.44 19.29 20.34 21.41 22.62 23.61 24.73 28.61 30.64 33.44 25.46 26.41 27.98 29.94 32.10 1EST FREQ= 6.00 HZ. MULT. CORR. COEFF 0.997779 TYPICAL FIGHTER, COMPOSITE MISSION, MAX STRESS = 20 KSI 0.992110 0.993908 0.999683 0.998730 0.993320 0.991999 0.997270 0.997470 090666-0 0.998308 0.998626 9988660 0.998065 0.997351 168866.0 195866-0 0.999565 0.999857 0.995241 0.996992 0.999651 AN= 0.0 A IREGRESSION) NT 0000"9 =M 0.501 0.536 0.546 0.649 0.717 0.798 1.000 1.342 0.312 0.366 0.428 0.462 1.146 1-238 1.517 1.463 1-626 AMBIENT AIR A (MEASURED) 0.435 0.535 1.005 000 0.645 0.120 0.855 1.150 1.190 1.290 1.345 - 460 .520 -625 0.490 BE 0.250 IN. PMAX= ENVIRONNENT CONDITION: 10000-11000-11700-12490-12800-13690-13690-14200. 14400. 14600. 2000. 5000. 5000. 1000. 14990. 308 \$+ 14000-14820. SPECIMEN NO. : CCT SPECIMEN 212212 222222222222 **#1184**

2.726E-05 3.279E-05 3.640E-05

2.0 7kE-05

4-703E-05 5.510E-05

8-727E-06 1.467E-05 -643E-05 .b45E-65 \$-330E-05 6.986E-05 6.065E-05 9.123E-05

1-064E-04 1-162E-04

-244E-04 -291E-04 -138c-*+96E-U4 -755E-04 2-411E-J4 2.762E-04

39.67 41.36

34.67 37.27

0.959650

.727

.125

15510. 15720.

. 940 2.040

1.835

15907.

16186.

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35.96

3.199E-04 3.546E-U4 3.6 K3 E-04

42.87

-611E-06 10110

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TABLE 80. DATA TABULATION FOR TEST M-64 (CONCL.)

PECINEN NO.: N-64 TYPICAL FIGHTER, COMPOSITE MISSION, MAX STRESS = 20 KSI

			DAZEN	4-336E-04	4.972E-04	5-981E-04	6 - B 33E - 04	9-185E-04	9-643E-04	1-1668-03	1.438E-03	2-129E-03	3.055E-03	3.7486-03	5.7TE-03
		:	DELTA K	47.21	48.81	50-19	55.04	54.06	55.13	57.41	59.23	62-14	66.37	68.74	14.59
	-00 HZ-	:	K-MX	41.06	45.64	11.44	45.26	47.01	47,94	49.92	51.50	54.03	57.11	59.78	24.06
AN= 0.0 IN.	TEST FREQ= 6.00 HZ		MULT. CORB. SOEFF	0.999521	0.998312	505186-0	0.999576	0.999687	0.996047	0.997241	0.996841	0.983005	0.986554	0.989071	\$06656°O
H= 6.000 IN.			A (REGRESSION)	2,243	2.352	2.464	2.565	2.693	2,759	2.896	3-000	3.160	3,375	3.488	3,740
B= 0.250 IN.	PMAX=	AMBIENT AIR	A (MEASURED)	2.250	2.350	2.475	2.560	2.690	2.770	2.885	2-990	3.175	3.375	3.450	3.746
		COMDITION:	CYCLES	16321.	16445	16572.	16643.	16731.	16774.	16841.	16887.	16940.	16987.	17006.	17035.
CCT SPECIMEN	PAIN=	ENVIRONMENT	OM.	٤,	30	31	32	33	*	35	36	37	60	2	9

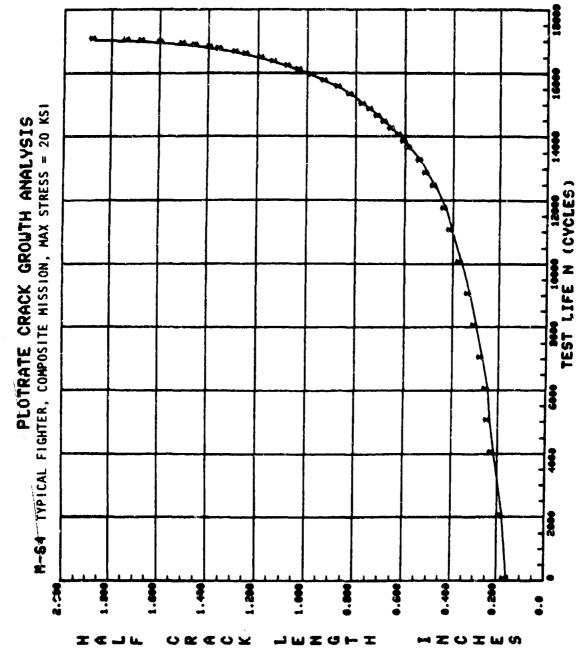


Figure 81. Crack growth curve for test M-64.

DATA TABULATION FOR TEST M-54A TABLE 81.

	i i	0.250 IR.	M= 6.000 IN.	ANE O.O. TH.			
7 X I X E		PNA X=		TEST FREG* 6.00	6-00 HZ		
ENVIRONMENT CONDITION:	DWD1110M	I: AMBIENT AIR					
.0v	CYCLES	A (MEA SUR ED)	A (REGRESSION)	MULT. CORR. COFFE	K 86 X	DELTA K	
~4 :	•	0.300	0.300	,0	10.41	12.47	8 800E-07
~	5450	0.325	0.321	5956660	10.77	12.91	3.0265-06
m ·	12000	0.375	0-360	1006660	11.72	14.05	2 4 MET - 25
₹ ,	17628.	0-455	6-454	100666.0	12.82	15.36	7.3%5-04
Λ,	22700.	0.545	0.538	0.998540	13.90	16.75	9-3825-06
٠	26000	0.600	0.605	0.296336	15.85	17.79	1.0646-05
>	2£200.	0.645	0.652	0.998396	15.42	10.46	1-1935-05
 (30400	0.710	104	0.999280	16.04	19.22	1.3565-05
3	32400	092.0	0.763	0.942135	16.73	20.05	1-726-05
2:	34000	0.810	0.622	0-978650	17.39	20.84	1-7435-05
	35506.	0-865	0.677	0.977584	17.99	21.55	1-4006-05
~:	3260C.	0.915	0,881	0.977655	10.04	21.61	
M .	38000	0.965	096-0	1097760	19.08	22.86	2.248E-05
	39600	•	1.021	0.982207	19.51	23.37	2-3435-05
	0000	9	1.069	0.993062	19.98	23.94	2-492E-05
97	-0001	7	1-129	0.997156	20.58	24.66	2.013E-05
	46020	- , ,	1-167	0.997127	21.16	25.35	3-038E-05
	1200	1066	477.4	0.236770	21.56	25.83	3-248E-05
	0000		1-265	0.998641	21.91	26.26	3.421E-05
		٠	91%·I	0.999643	22.35	26.78	3-5385-05
	11000	200.1		0.999241	22 -63	27.35	3-403E-05
	43300°	1.13	1.413	0.999752	23.32	27.9%	4.044E-05
•	-00444		1-462	0.499718	23.78	28.49	4.3898-05
100		626-1	626-1	198656-0	24.37	29.20	4-84E-65
	17355	9	1-621	916666-0	25.26	30.26	5.565E-05
•	40023	1.707	1.703	0.999675	26.02	31.17	6-285E-05
	40750	9 (+OR**	695866-0	26.95	32.29	7.3785-05
)	01/1/1	•					

TABLE 81. DATA TABULATION FOR TEST M-64A (CONCL)

SPECINEN MO.1. H-644 ... TYP. EIGHTER COMPOSITE MISS. STRESS = 15 KSI MAX

MIN=		PMAX=		TEST FREG= 6.	6.00 HZ.	
ENVIRONMENT CONDI	COMDITIONS	AND LENT AIR	:		1	;
MO	CYCLES	A (MEASURED)	ACREGRESSION	MIT, CORP. CORE	K-MA Y	2 47 130
53	50283.	2.005	2.010		28.85	34. 57
30	56739.	2.110	2.102	0.999710	20.00	35.42
31	512%.	2,215	2.218	0.999759	30.83	36.96
32	51620.	2-315	2.315	0.999042	31-76	38.65
33	51962.	2.410	2.408	99866	32.67	39,15
34	52338.	2.520	2,527	0.998672	33.66	40.57
35	52601.	2.625	2-623	0.999329	36.84	41.74
36	52865.	2.730	2.738	0.998717	36.06	43.20
37	53064.	2.840	2.835	0.993366	37.10	77-77
38	53282.	2.960	2-950	0.998237	38.39	66.00
39	53483.	3,050	3.067	0.997231	39.76	47.54
40	53637.	3,170	3,165	0.997500	40-04	3
† 1	53765.	3.255	3.259	0.998855	42.14	50.45
45	53897.	3.375	3,363	0.998450	43.77	52.45
43	53907.	3,480	3,476	0.999644	45.07	24.00
**	54069.	3.560	3.581	0-996524	46.60	55.84
45	54151.	3.700	3.707	0.996819	48.56	58.18
46	54225	3.835	3.852	0.990403	50.98	61.06
47	54271.	3.970	3.978	0.993632	53.27	63-83
9	54300.	4.050	4-037	101966.0	55.21	66.15
07	54 324	4 250	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			

1.096E-04 1.225E-04 1.368E-04 1.526E-04

1-4 08E-04 2-0 79E-04 2-291E-04 1.5416-03 1.7316-03 2.1316-03 2.8486-03

9.332E-U4

2.8549E-04 3.216E-04 3.216E-04 4.382E-04 5.271E-04 7.548E-64

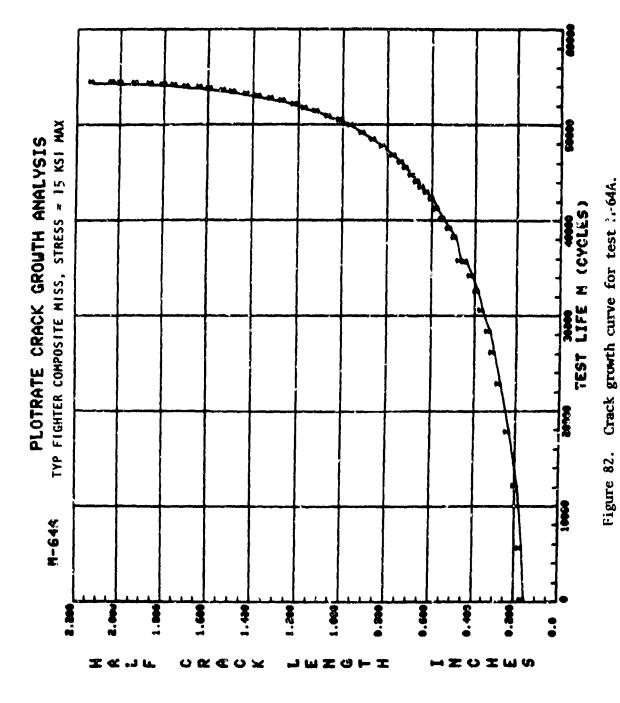


TABLE 82. INTA TABULATION FOR TEST M-64B

7777 12.22 14.32 15.22 51.51 27.52 27.53 10.53 19.39 20-13 11,46 13.52 13.89 14.26 1.25 1.85 1.37 4.47 9.17 10.63 11.39 12.43 12.40 14.56 14.91 15.49 15.90 16.15 19.9 10-27 TEST FREG= 6.00 MZ. MULT. COBA. COEFF 0.996342 TYP FIGHTER COMPOSITE MISS. STICESS = 10 KSI MAX = 0.962537 0.965673 0.965673 0.992995 0.997787 0.997787 0.997271 0.99140 0.9910 0.998965 0.998955 0.996910 0.997742 2.090.0 0.9**91**114 AN= 0.0 A (REGRESSION)
0, 300
0, 319
0, 333
0, 390
0, 443
0, 590
0, 590
0, 590 - ME 6.000 IN. 1.236 1.281 1.334 1.065 0.755 0.952 0.954 0.954 . 8 1.116 1.367 1.425 AMBIENT AIR AIREASURED). 0.300 0.3% 2017 . 005 527 .335 25.00 .285 .45 730 0.910 377-0 0.530 35.0 B= 0.250 18. PMAX= ENVIRONMENT COMDITION: 3 1500. 18000. 59100. 92450. 145000. 175300. 187000. 185000. 202400. 209600. 215557. 222200. 239000 247600. 251200. 255000. 264300. 269200. 273500. 262100. 149350. 12559. 243700. SPECIMEN NO. : CCT SPECIMEN PRINT 222

9-3846-07 7-6625-07 1-9266-07 1-0466-06

1.2755-4 1.5865-6 1.0096-6

2-1146-46 2-3436-46 2-736-66 3-90766-76 3-3566-46 3-7866-46 4-1056-46 1-1446-05

D-172E-0

7-725E-46 0-705E-06

\$-386-5 \$-386-5

7.337E-0

5.3 TOE-0

TABLE 82. DATA TABULATION FOR TEST M-64B (CONCL.)

		The Section 100.	. ME 6-000 . IM.	AME O.O. IN.			
		PMAX=		TEST FREG= 6.00 HZ.	.00 HZ.		
ENVIRONMENT	COMDITION:	AMBIENT AIR					
9	CYCLES	A (MEASURED)	A (REGRESSION)	MAKT. CORE. COEFF	K-MAX	DELTA K	
54	278000.	1.630	1.636	0.999732	17.99	23.39	1.276-65
30	281400.	1.920	1.923	0.999743	11.53	24.00	1-3636-03
31	284350.	2.010	2.004	927894.0	19.03	24-74	1456-65
32	298 200.	2-120	2-121	0.999310	19.76	25.65	1.6386.05
33	291300.	2-220	2-222	1969640	20.39	26.51	1-6625-69
4	293600.	2,305	2,309	0.999409	20.95	27.23	2-0735-65
35	295100.	2.400	2.404	0.999495	21.54	28-03	2-2965-69
36	298100.	2.525	2.515	0.999390	22 - 29	28.38	2.5736-65
37	24.25°	2.605	2.60	9608650	22.92	29.77	2-9636-65
#	301700.	2.716	2.718	0.99111	23.60	30.78	3-3165-65
39	303100.	2.605	2.809	111696-0	24.33	31.62	3-5645-65
\$	304300	2,910	2.906	0.277294	25.04	32.55	4-1456-45
7	305391.	3.000	3.003	0.999433	25.77	33.51	4-4316-6
45	306214.	3.065	3.076	0.996650	26.34	34.23	4-786-45
7	307270.	3-175	3,176	9927766	27.15	35.23	5-334E-05
*	306226.	3.276	3.277	0.99475	27.99	36.39	6-108-65
45	309294.	3-410	3.415	0.999742	29-21	37.97	7.335E-E
9	- TEE	3,58	3-421	5404660	29.92	38.90	6-3176-65
43	319650.	3.635	3.641	0.99648	31.40	78-09	1-5665-64
7	311100.	3.73	3.730	0.999093	32.32	42.62	1-1465-64
;	311659.	3.665	3.863	619866.0	33.01	43.96	1-4226-64
20	312006.	3.960	3.956	0.997068	34.92	3.2	1-705-1-
15	312400.	4.065	4-100	0.997612	36.75	47.83	2.002 E-64
25	312000.	4.265	4-275	0.999298	39.33	51-13	7446-04
•		֡					

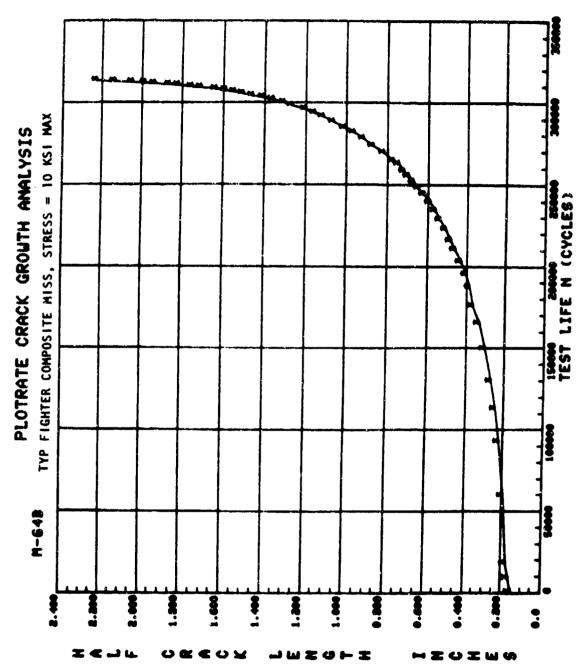
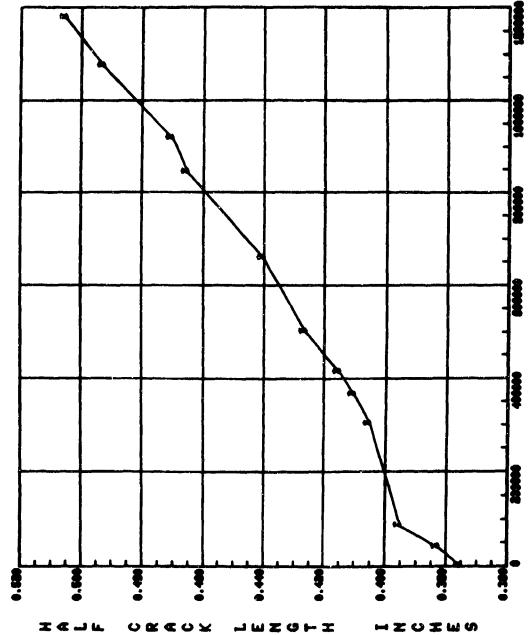


Figure 83. Crack growth curve for test M-64B.

TABLE 83. INTA TABULATION FOR TEST M-65

יבנוזבת חיים		ITTICAL INMIST	IMMISTURI, MAS SINESS = 12 KSI	ā			
ECT SPECIMEN		8 = 0.250 IN.	WE GOOD IN.	AN = 0.0 IN.			
" Z X		* XYad		Trst FREC =	= 6.70 HZ		
ENVIRONMEN	ENVIRONMENT CONDITION:	AMRICAT AIR					
.CY	CYCLFS	A (MEASIDED)	A (Prigrission)	MILT. COUR. COEFF	X-MAX	DELTA K	DAZON
_	0	0.750	0.750	6.993805	12.14	21.26	2.7416-37
2	487FD.	0.745	0.767	0.974507	12.30	21.41	1.9175-67
•	ESOU.	0.790	944 ئ	0.941955	13.40	21.15	1.3316-07
4	300400	0.010	0.212	0.952491	17.71	22.25	9.764E-3E
*	363400.	0.00	0.123	0.075649	13.50	22.47	E.E40E-36
œ	412000.		0. 030	0.996,999	13.66	27.53	9.556F-0H
~	500000	0.P52	0.850	こうりょうし	14.03	22.90	1.0536-07
€.	454000.		0.883	0.097692	14.17	23.24	1.1205-67
ø	•41000°	0.440	0.926	C.0400.0	14.46	23.P.E	1.1918-17
۲.	•1400C•		£\$0.0	Ar9799.0	14.02	54.09	1.2198-07
-	1074000.	0.985	7-0-0	3,597795	15,15	24.43	1.2596-07
- 12	1172,000.		1.010	0.096773	15.28	54.99	1.4206-07





TEST LIFE N (CYCLES)

#.

TABLE 84. DATA TABULATION FOR TEST M-66

PECINEN NO.: M-66 TYPICAL TRANSPORT, MAX STRESS = 16.8 KS!

FMIN = PMAX = TEST FREO = 6.00 MZ. ENVIRONMENT CONDITION: AMBIENT AIR BA/DM MD- CYCLES AIMEASURED AIREGRESSION MULT. CORR. COEFF K-MAX DELTA K BA/DM 1 0.500 0.500 0.945275 14.95 24.29 1.164E-67 2 71100- 0.510 0.9510 0.945275 14.95 24.29 1.164E-67 3 86200- 0.510 0.9510 0.945275 14.95 24.29 1.164E-67 4 161700- 0.510 0.9516 0.95750 15.47 24.76 1.336E-07 5 211300- 0.555 0.559 0.955739 15.47 25.14 1.436E-07 6 250000- 0.555 0.559 0.955739 15.47 25.47 1.456E-07 7 256100- 0.555 0.559 0.95532 15.49 26.49 1.1596E-07 8 335000- 0.555 0.556 0.556 0.556 0.556	CCT SPECIMEN		6 - 0.250 IN.	. = 6.000 IM.	AN = 0.0 EN.			
AMBIENT AIR AIMEASURED) AIREGRESSIUN) MULT. CORR. COEFF K-MAX DELTA K 0.500 0.516 0.945275 14.95 24.29 1 0.510 0.516 0.945275 14.95 24.29 1 0.525 0.519 0.975588 15.24 24.76 1 0.535 0.535 0.951709 15.47 25.14 1 0.545 0.559 0.951709 15.47 25.14 1 0.555 0.559 0.951709 15.47 25.14 1 0.555 0.559 0.955739 15.67 25.47 1 0.555 0.559 0.955739 15.62 25.69 1 0.587 0.567 0.970582 15.93 25.69 1 0.595 0.596 0.971575 16.35 26.57 1 0.605 0.607 0.998658 16.51 26.57 1 0.620 0.620 0.993462 16.79 27.28 1 0.645 0.645 0.998611 17.03 27.57 1			PHAX =			.00	.•	
AIMEASURED AIREGRESSION MALT. CORR. COEFF K-MAX DELTA K 0.500 0.945275 14.95 24.29 1 0.510 0.516 0.94516 15.19 24.29 1 0.525 0.519 0.97558 15.24 24.76 1 0.535 0.535 0.951709 15.24 25.74 1 0.545 0.951709 15.47 25.14 1 0.545 0.955739 15.47 25.14 1 0.555 0.559 0.955739 15.67 25.47 1 0.557 0.95670 0.95670 15.83 25.47 1 0.557 0.567 0.97755 15.33 25.69 1 0.597 0.95658 16.35 26.57 1 0.607 0.998658 16.51 27.26 1 0.645 0.645 0.993462 16.79 27.27 1	¥	COND 1 T TON	AMB I ENT					
0.500 0.945275 14.95 24.29 1 0.510 0.916 0.967160 15.19 24.49 1 0.525 0.519 0.97558 15.24 24.76 1 0.535 0.95739 15.47 25.14 1 0.555 0.559 0.95739 15.67 25.47 1 0.555 0.559 0.96505 15.83 25.47 1 0.557 0.567 0.96705 15.93 25.40 1 0.587 0.596 0.971575 16.24 26.40 1 0.595 0.596 0.967614 16.35 26.40 1 0.607 0.98961 16.35 26.40 1 0.620 0.620 0.9896255 16.36 27.26 1 0.645 0.645 0.993611 17.03 27.67 1		CYCLES	A(MEASURED)	AIREGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	BA/DN
0.510 0.516 0.967160 15.19 24.69 1 0.525 0.519 0.97556 15.24 24.76 1 0.535 0.549 0.95739 15.47 25.14 1 0.545 0.549 0.95739 15.67 25.47 1 0.555 0.559 0.96050 15.83 25.72 1 0.587 0.967 0.971575 16.24 26.40 1 0.595 0.596 0.971575 16.24 26.57 1 0.607 0.989658 16.31 26.87 1 0.620 0.620 0.993462 16.79 27.28 1 0.645 0.645 0.998611 17.03 27.67 1		ö	0.500	0.500	0.945275	14.95	24.29	1.1448-67
0.52\$ 0.519 0.975568 15.24 24.76 1 0.535 0.535 0.95739 15.47 25.14 1 0.545 0.549 0.95739 15.67 25.47 1 0.555 0.559 0.96050 15.83 25.72 1 0.557 0.567 0.970582 15.93 25.89 1 0.587 0.967 0.971575 16.24 26.40 1 0.595 0.596 0.971575 16.35 26.87 1 0.607 0.989658 16.51 26.87 1 0.620 0.620 0.993462 16.79 27.28 1 0.645 0.645 0.993462 16.79 27.28 1		71100.	0.510	0.516	0.967160	15.19	24.69	1-1056-67
0.535 0.951709 15.47 25.14 1 0.545 0.549 0.955739 15.67 25.47 1 0.555 0.559 0.96050 15.83 25.72 1 0.557 0.567 0.970582 15.93 25.89 1 0.587 0.588 0.971575 16.24 26.40 1 0.595 0.596 0.971575 16.35 26.87 1 0.607 0.989658 16.51 26.87 1 0.620 0.620 0.998658 16.51 27.21 1 0.645 0.645 0.993462 16.79 27.28 1		86200-	0.528	0.519	0.975568	15.24	24.76	1-0996-07
0.545 0.549 0.95739 15.67 25.47 1 0.555 0.559 0.96050 15.83 25.72 1 0.575 0.567 0.970582 15.93 25.72 1 0.587 0.587 0.971575 16.24 26.40 1 0.595 0.596 0.971575 16.36 26.57 1 0.605 0.607 0.98956 16.51 26.82 1 0.620 0.620 0.993462 16.79 27.28 1 0.645 0.645 0.998611 17.03 27.67 1		161700.	0.535	0.535	0.951709	15.43	25.14	1.3366-07
0.555 0.559 0.965050 15.83 25.72 1 0.575 0.567 0.970582 15.93 25.89 1 0.587 0.588 0.971575 16.24 26.40 1 0.595 0.596 0.971575 16.34 26.57 1 0.605 0.607 0.98958 16.51 26.82 1 0.620 0.620 0.993462 16.79 27.28 1 0.645 0.645 0.998611 17.03 27.67 1		211300.	0.545	0.549	0.955739	15.67	25-47	1-4295-07
0.575 0.567 0.970582 15.93 25.89 1 0.587 0.588 0.971575 16.24 26.40 1 0.595 0.596 0.947614 16.35 26.87 1 0.605 0.607 0.98958 16.51 26.82 1 0.620 0.620 0.998555 16.68 27.11 1 0.645 0.645 0.998611 17.03 27.67 1		250000.	0.555	0.559	0.965050	15.83	25.72	1.4556-07
0.587 0.588 0.971575 16.24 26.40 1 0.595 0.596 0.947614 16.35 26.87 1 0.605 0.607 0.989658 16.51 26.82 1 0.620 0.620 0.99365 16.68 27.11 1 0.630 0.627 0.993462 16.79 27.28 1 0.645 0.645 0.998611 17.03 27.67 1		268100.	0.575	195.0	0.970582	15.93	25.69	1.5594-07
0.595 0.596 0.967614 16.35 26.87 1 0.605 0.607 0.989558 16.51 26.82 1 0.620 0.620 0.992555 16.68 27.11 1 0.630 0.627 0.993462 16.79 27.28 1 0.645 0.645 0.998611 17.03 27.67 1		335000.	0.587	0.588	0.971575	16.24	26.40	1-6156-07
0.605 0.607 0.989658 16.51 26.82 1 0.620 0.620 0.992555 16.68 27.11 1 0.630 0.627 0.993462 16.79 27.28 1 0.645 0.645 0.996611 17.03 27.67 1		362000.	0.595	0.596	0.967614	16.35	26.57	1.7226-07
0.620 0.620 0.992555 16.68 27.11 1 0.630 0.621 0.993462 16.79 27.28 1 0.645 0.998611 17.03 27.67 1		396000.	0.605	0.607	0.989658	16.51	26.82	1.656E-07
0.630 0.627 0.993462 16.79 27.28 1 0.645 0.645 0.998611 17.03 27.67 1		428500.	0.620	0.620	0.992555	16.64	27.11	1.8055-07
0.645 0.645 0.998611 17.03 27.67		44 7500-	0.630	0.627	0.993462	16.79	27.28	1.8036-07
		500000.	0.645	0.645	0.998611	17.03	27.67	1.095E-07

PLOTRATE CRACK GROUTH DATA M-66 TYPICAL TRANSPORT, MAX STRESS = 16.8 KSI

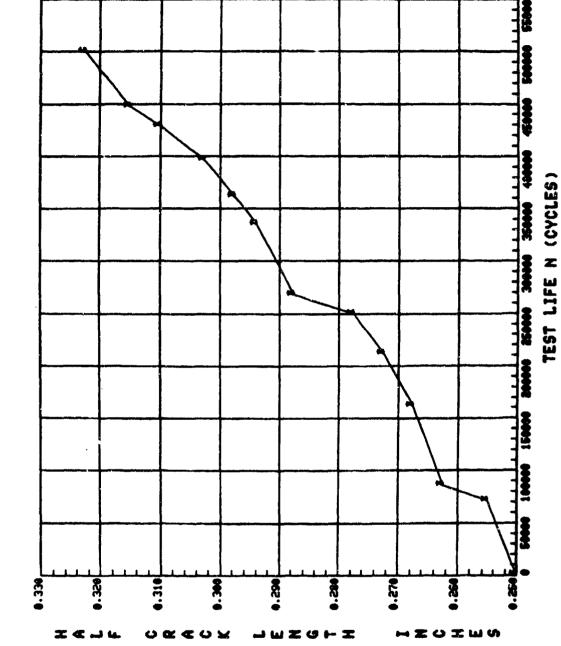


Figure 85. Crack growth curve for test M-66.

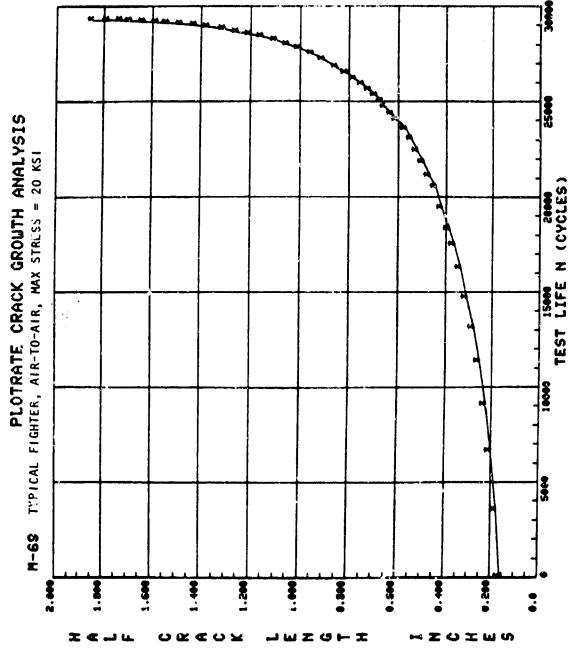
TABLE 85. INTA TABULATION FOR TEST M-69

TYPICAL FIGHTER, AIR-TO-AIR, MAX STRESS = 20 KSI

		PMAX=		TEST FREG# 6	FREQ= 6.00 HZ.		
ENVIRONMENT CONDITION:	COMDITION:	AMBIENT AIR					
MG.	CYCLES	ACMEASUREDI	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	DA/DA
1	•		0.310	166666-0	13.98	15.61	4-4675-06
7	3500-	0.350	0.350	9666660	14.85	16.59	6-9776-04
٣	-0099	0.400	0.400	0.999951	15-09	17.75	9-349E-06
4	\$ 050 •	0.450	0.450	0.999163	16.87	18.6	1-1685-05
4٦	11350-	0.505	0.507	0.999498	17.92	20.01	1-4015-05
•	13100.	0.555	0.558	101999-0	18.82	21.01	1-6136-05
7	14700.	0.615	0.612	0.999399	19.72	22.02	1-868E-05
J	16250.	0.670	0.672	0.999278	20.71	23.12	2-167E-05
•	17500.	0.725	0.729	0.999129	21.59	24-11	2-366E-05
16	18300.		0.767	0.996716	22-16	24.75	2.579E-05
11	19400.	0.830	0.827	0.998470	23.05	25.74	2.900E-05
12	20500	0.885	0.893	0.998313	24.90	26.80	3-314E-05
13	21100.	0.935	0.933	0.998850	24.56	27.43	3.522E-05
14	21800-	0.985	786-0	928866-0	25.26	28-21	3.845-05
15	22400	1.035	1.032	0.996407	25.92	28.94	4-413E-05
9	23050.	1.085	1.089	0.997991	26.69	29.80	5-014E-05
11	23550.	1.135	1-140	0.998625	27.35	30.55	5.760E-05
36	24000	1.200	1.194	0.997092	28.06	31.33	6-193E-05
19	24350.	1.240	1.242	9508660	78.67	32.01	6-601E-05
50	24700.	1.295	1.290	0-997857	29.28	32.69	7.014E-05
2.1	25000-	1.325	1,330	1548640	29.78	33.26	7-407E-05
22	25300.	1.375	1.375	0.898447	30.35	33.89	8.146E-05
23	25600.	1.475	1-424	0.999608	30-95	34.28	8.958E-05
. 47	-00657	1.480	1.481	19799797	31.67	35.36	1-0186-04
52	.620c.	1.545	1.546	0.999818	32.46	36.24	1-109E-P
56	26500.	1.615	1.616	0.999854	33.32	37.21	1-208F-Q
27	26800.	1.6%	069-1	0.999441	34.23	38.22	1-3275-04
•							

TABLE 85. DATA TABULATION FOR TEST M-69 (CONCL)

3.016E-04 4.327E-04 6.2346-04 7.691E-04 3.029E-03 1-185E-03 2-106E-03 2.049E-U4 2.78E-04 3.301E-04 5.C48E-04 9-629E-04 -343E-03 1-767E-04 2-376E-04 -060E-03 2.583E-03 DELTA K 41.01 42.41 43.71 58-73 60-24 62-43 45.13 46.77 49.50 53.24 64.36 46.13 51.28 57.08 99.99 37.98 39-14 40.41 43-10 44.32 19.14 51.11 52.60 53.95 55.90 59.64 61.10 63.82 45.92 TEST FREQ= 6.00 HZ. 69.33 57.63 41.88 MULT. CORR. COEFF 0.998819 × 0.999374 0.999685 165656-0 0.998837 0.999236 0.997140 0.999629 0.999131 536166.0 0.997612 6,999163 0.995996 0.994792 270366.0 TYPICAL FIGHTER, AIR-TO-AIR, MAX STRESS = 20 KSI AME 0.0 _AIREGRESSION)
1.895 N= 6.000 IN. 2.855 1.997 2-193 3.070 2-492 3.155 3.272 3.557 2.614 3.371 3.400 1691 ENVIRONMENT CONDITION: AND LENT AIR A (MEASURED) 2.090 2.500 2-610 \$.970 2-195 3.375 2-740 2.960 .155 1-265 3-455 3.690 B= 0.250 IN. PHAX= 28220. 28220. 28420. 200 10. 20130. 29095. 291**00.** 29221. SPECIMEN NO. : N-69 27510. 27790. 23560. 29251. CYCLES 22145 29276. 28680. 29291. CCT SPECIMEN 8 3 77 12 33 2 6 HIM 32 9



ABLE 86. INTA TABULATION FOR TEST M-69A

SIMPLIFIED SPECTRUM, TYP FIGHTER-AIR TO AIR, MAX STRESS = 12 KSI SPECIFER MD.: N-69A

		PMAX=		TEST	T FREG= 6.00	.00 HZ.		
NVIRONNE	ENVIRONMENT CONDITION:	AMBIENT AIR				•		
D	CYCLES	AL MEASURED)	AIREGRESSION	MULT. CORR.	LA. COEFF	K-MAX	DELTA K	DA/DA
-4	•	0.310	0.310	\$6.0	0.998348	5.59	6.52	1-6708-06
~	11600.	0-345	0.346	\$ 6. 0	0.997398	5.91	69.9	1.6298-06
M	24350.	0.395	0.383	96.0	0.991417	6.22	7.25	2-0146-06
•	37460.	0.435	0.442	\$6.0 \$	0.992365	69-9	7.20	2-1745-06
'n	47700.	0.4.90	0.500	56°O	0.996100	7.12	6.31	3.5436-06
9	59000	0.590	0.587	\$6.0 \$	1096660	7.73	10.6	4-8196-04
_	64030	0.640	0.638	\$6 * 0	0.999573	90-8	9.41	5-416E-16
•	68900.	069*0	9-69-0	0.9	0.999584	8.42	9.83	5.859E-06
•	72500	972.0	0,737	9.0	0.99E784	8.69	10.13	6-4436-06
2	75600.	0.780	0.777	6.0	0.998468	8.93	10.42	7.0646-66
11	80300.	0-840	0.847	6-0	0.995652	9.34	16.89	8-6714-66
12	82800.	058-0	0.890	16.0	0.995961	95.6	11.16	9.2256-06
13	25 500.	0.540	0.943	3.0	. 495804	98.6	11.53	1-0196-05
14	87100.	066-0	0.979	6-0	-9964 58	10-08	11.76	1.0%E-05
	£9750.	1.030	1.038	٠. د	214966	10.40	12.14	1-1425-05
91	91600.	1.080	1.060	6.0	.996138	10.63	12.40	1-205E-65
17	93800.	1-140	1.133	6-0	.99783û	10-90	12.72	1.277E-05
9	\$100.	1-190	1-197	6.0	525866*	11.24	13-11	1,3846-05
6	97600.	1.240	1.237	6.0	.998470	11.44	13.35	1-464E-05
50	.00566	1-295	1.293	6-0	0.998693	11.73	13.68	1.596E-05
21	101500.	1-355	1961	6.0	116866*	12.07	14.06	1.7736-65
22	102500.	1.400	1.396	5.0°	0.999546	12.24	14.26	1-862E-05
23	103900	3.4.1	1.450	6-0	0.999615	12.51	14.66	2.6315-05
24	105100.	1.500	1-502	6.0	159666	12.77	14.89	2-1746-0
25	107200.	1.595	1.595	3.0	0.999723	13.22	15.43	2-391E-05
56	109206.	1.700	1.698	6-0	0.999531	13.73	16.02	2.600£-65
27	111000.	2.3	1.753	6.0	990366-0	14.19	16.56	2.664E-05
28	443400			•				

DATA TABULATION FOR TEST M-69A (CONCL) TABLE 86.

*NIW			The control of				
		PMAX=		TEST FREQ= 6.	6.00 HZ.		
VIRDIME	ENVIRONMENT CONDITION:	: AMBIENT AIR					•
MO.	CYCLES	AIMEASIREDI	A (REGRESSION)	MULT. CORR. COEFF	X-MAX	DELTA K	DAZDA
29	114688.	2.020	2.040	0	15.40	17.57	3-2675-05
8	116000.	2-130	2.127	0.998190	15.84	18.48	4-274E-05
31	117150.	2,240	2,220	0.998353	16.34	19.61	4-8296-05
32	118200.	2.330	2.338	0.997831	16.90	19.72	5-468E-05
23	119250.	2.445	2.453	920656"0	17.50	20.42	6-224E-05
*	118940.	2.540	2,538	0.999825	17.96	20.95	6.997E-05
35	120540.	2.630	2.626	0.99950	18-43	21.51	7-5745-05
%	121210.	2.730	2.735	0.999445	19.04	22.22	8-944E-0
37	121755	2.840	2.042	0.5%24	19.65	32.93	1-0246-5
	122296.	2-950	2.948	0.999885	20.28	73.67	1-1626-
30	122754.	3.055	3-060	0.999872	20.47	24.47	1-292E-0
99	123126	3,165	3, 161	0.999627	21-62	25,23	1-4356-0
14	123498.	3.270	3.268	0.999020	22.34	26.06	1-6295-0
42	123797.	3.360	3.367	0.946550	23.03	26.87	1 -363E-04
43	124080.	3.470	3.474	0.999519	23-80	27.77	2-1766-0
\$	124284.	3-565	3.564	0.999693	24.56	20.53	2-482£-0
45	124490.	3.670	3.672	0.999775	25.37	69.67	2-8576-6
9	124685.	3.755	3. 788	TE#666*0	26.37	30,76	3-286E-04
14	124800.	3.865	3.864	5.999373	27.06	31.57	3-6868-01
40	124921.	3.955	3.956	0.599310	27.94	32.59	4-175E-0
42	125050	4.050	4.067	0.998642	29.06	33.52	5-0566-0
, 0,	125120.	4-140	4.137	0.995513	29.84	34.51	5-à65F-04
21	125200.	4-225	4.233	0.994369	30.95	36.11	1-4-76E-0
52	125268.	4.330	4.336	0.995346	32.24	37.61	9-375F-(w
53	125325.	4	4.449	0.997297	33.70	111 000	1000
				* 1 1 1 1 1 1 1 1 1	7744	74.47	

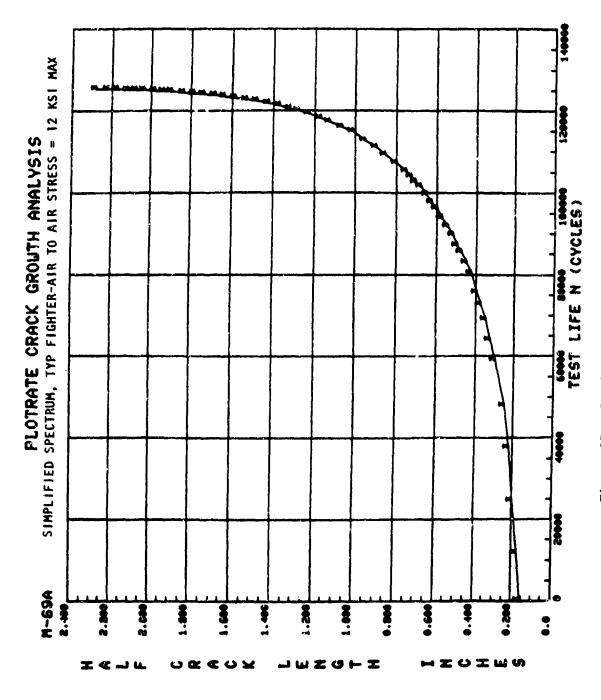


Figure 87. Crack growth curve for test M-69A.

TABLE 87. DATA TABULATION FOR TEST M-70

SPECIMEN NO.: M-70 TYPICAL FIGHTER, AIR-TO-GROUND, MAX STRESS = 18KSI

		PHAX=		TEST FREQ= 6.	6.00 HZ.		
ENVIRONMENT CONDITION:	CONDITION:	AMBIENT AIR					
NO.	CYCLES	A I ME ASURED!	A (REGRESSION)	MALT, CORR. CAFFF	K-MAX	96174 4	
-	•	0.2%	0.297	13666-0	12.32	- 4	
~	2500.	0.330	0.325	0.989729	12.49	15.25	
~	2000	0.355	0.351	0.593178	13.30	16.36	00-30E-0
*	8000.	0.370	0.373	0.934506	13.80	16.67	2675.4
so.	12000.	0.415	0.406	0.993243	14-41	17.62	5.2026-04
9	16000.	0.440	0.450	0.996361	15.19	18.57	464644
~	20000	0.510	0.507	0.996898	16-14	19.72	70436-04
45 (24000.	0.580	Q. 576	0.997695	17.21	21.03	9-7775-04
∞ (26000	0.615	0.619	0-998327	17.B6	21.83	1080-1
0	28000	0.660	0.661	0.999469	18.48	22.58	10.301
	30000	0.710	0.712	9206660	19.19	23.46	1.3296-05
7:	32000	0.770	0110	0-999304	19.99	24.43	1.448E-05
S .	34000	0.835	0.830	0.998187	20.79	25.41	1-60eE-05
* "	35500.	0.875	0.879	0.997722	21.42	26.19	1-751E-05
27	3000	0.975	0.932	0.998087	22.09	27.00	1.9656-05
9 :	35000	0.975	0.970	0.999067	22.57	27.59	2-1305-05
	39000-	1.015	1.015	070965*0	23.12	28-25	2-4435-05
9	-000	1.065	1-066	0.998049	23-74	29-02	2-6616-05
2 2	-00014	1-115	1-119	0.998447	24.37	29.18	2.9736-05
3 :	3000	061-1	1.183	0.998569	25.12	30.70	3-312E-05
- E	00000	1.245	1.252	0.996634	25.92	31.60	3-4776-05
2 ;	0004	1.335	1.329	0.997886	26.80	32.75	4-1625-65
5 ;	42000·	1.410	1.415	0.998853	27.76	33.92	4-74-65
55	42200	1.460	1-463	696866*0	28.30	35.25	5.1715-65
\$ 2	00000	1.520	1.513	0.999655	28.85	35.26	2.454-5
9 (4 7000.	1-630	1.628	0.998658	30.12	34.41	
12	48000	1.70	1.770	0.998512	31.64	34.21	4625-95

TABLE 87. DATA TABULATION FOR TEST M-70 (CONCL)

KS
∞
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MAX STRESS
HAX
AIR-TO-GROUND,
FIGHTER,
TYPICAL
M-70
Q
SPECIMEN

PRINE		PMAX		TEST FREG= 6.00 HZ	-00 HZ-		
ENVIRONMENT CONDITION:	ONDITION:	AMBLENT AIR					
9	CXCLES	A (MEASURED)	AIREGRESSION	MULT. CORR. COEFF	X-MAX	DELTA K	20.47
58	49400.	2-040	2.043	0.999577	34.69	42.40	1 2115 -04
30	49900.	2.175	2.170	0.998579	36-11	44.13	1 4846-84
31	50100.	2.220	2.228	0.99A774	26.27	36-47	
32	50500.	2.350	2,359	1000000	30.20	7234	7045
33	50900-	2.525	2.510	C75866-0	70-07	70.07	10.000
*	51100.	2.595	2,600	0.998104	41-14	16.03	7027
35	51300.	2.6F5	2.698	0.997006	47.38	51.80	2 70 70 44
36	51500.	2.810	2-805	E92666"0	43.74	27.65	2,2436.04
37	51700.	2.940	2.946	0.999756	45-61	\$5.75 \$4.75	3 4836.64
30	51825.	3.050	3-047	CAC-996-0	47.00	77.75	70-30-7
36	51968.	3.175	3-182	0.997346	75. 57	***	36164
?	25066.	3,275	3,293	0.996798	7	5	A 0 105 64
+	52125.	3.365	3-370	0.995676	51.86	82.54	0 040E 04
75	52225.	3.525	3.546	0.063000	\$4. A5		
43	52276.	3-645	3-662	790700		90.00	8-1636-03
\$	52306.	3.750	3,752	12 COOO C	72465	P7222	
45	52341.	3.8.75	3.875			50.7	1.1241-03
			\				

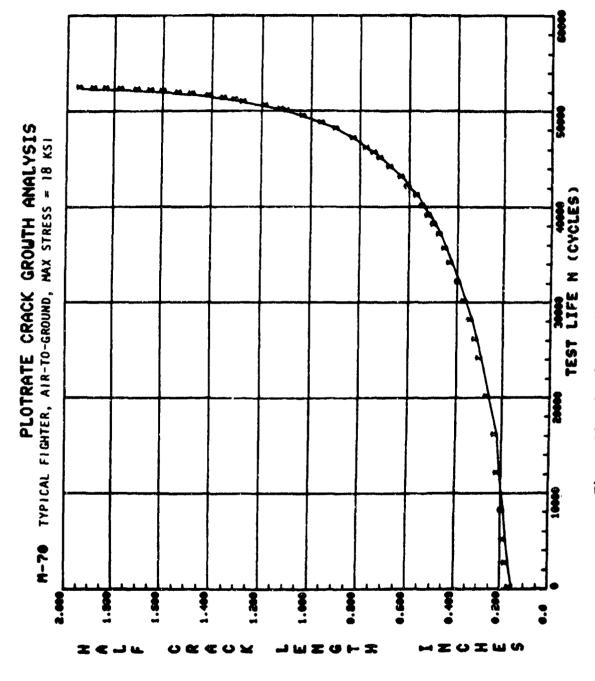


Figure 88. Crack growth curve for test M-70.

TABLE 88. DATA TABURATION FOR TEST M-70A

SIMPLIFIED SPEC. TYP FIGHTER-AIR TO GROUND STRESS = 10 KSI MX SPECIMEN NO.: N-70A

		FMAX=		TEST FREG 6.80 HZ.	-DO HZ-		
ENVIRONMENT COMDITION:	COMDITION:	AMBIENT AIR					
NO.	CYCLES	A (MEASURED)	AIREGRESSION	MULTA CORE, COEFF	K-NAX	DELTA K	BAZER
~	ં	9.36	908-0	0.999912	***	6.50	2-6986-63
~	33800.	0.335	0.332	0.998750	4.82	2.3	5-2536-63
~	29000.	0.365	0.365	0.999283	20.5	2.7	7-738-67
*	66006.	0.410	0.414	0.999298	5.35	25.7	1-4226-64
s	167406.	0.465	0.461	0.996736	5.69	7.63	1-276-64
,	126600.	0.515	0.514	0.29595	6.02	7.7	1-5145-1
_	144800.	6.545	0.573	0.994170	6.36	8.8	1.795-04
•	157300.	•	0.618	0.999335	19.9	2.6	2-07E-16
•	167300.	•	0.660	E-997967	Ad-d	9.57	2-4516-44
2	175400.	0.76	0.762	0.997926	7.06	9.06	2.7215-46
11	184100.	0.745	0.750	0.996664	7.30	10.22	3-0536-6
21	190100.	0.7%	0.786	0.996346	7.49	10.49	3-466-66
2	197700.	•	0.843	0.998025	1.76	10.67	3-6655-06
±	203500.	0.885	0.88	0.997601	7.91	11.17	4-026-04
15	297500.	GP .	0.919	0.998534	1.12	11,37	4-17K-44
=	214400.		0.961	92896-0	14.0	11.73	4-5466-64
17	216800-	1.025	1.020	0.992265	6.52	12.02	1.0566-02
=======================================	224200.	1.075	1.07	0.998932	8.62	12,35	5-2445-64
2	229400-	~	1-131	0.998741	9.0	12.71	5-462E-06
2	235000.	~	1.197	0.999534	9.36	13.11	6-5466-06
51	239300.	1.255	1.255	0.999315	9.61	13-46	7-454E-46
22	242450.	1.300	1.304	0.999265	9.82	13.75	7.9705-06
23	244650.	1.340	1.339	0.999281	9.96	13.95	1.532E-06
52	247600.	1.395	1,3%	0.998704	10.19	14-27	9-62E-06
\$2	250600	1.445	1-449	0.998827	10.42	14.59	9.5526-06
3 2	252900.	1.500	1.49.1	0.99883	20.52	14.83	9-545E-6
27	258500.	1.600	1.606	0.99288	11.07	15.49	1-109E-65
-		•	(4,				

TABLE 88. DATA TABULATION FOR TEST M-70A (CONCL.)

SIMPLIFIED SPEC. TYP FIGHTER-AIR TO GRUMMO STRESS . 10 KS! MX SPECIMEN NG.: M-70A

ENVIKONMENT CONDITION: NO. CYCLES 29 266750. 31 272500. 33 272500. 34 27500. 35 27500. 36 27500. 36 27500. 37 282100. 36 27500. 36 27500. 37 282100. 36 27500. 37 282100. 36 296000. 37 296000. 41 295000. 42 29600. 43 29600. 44 298600. 44 298600. 44 298600. 44 298600. 44 298600.	DMA Y =					
CYCLES 266750. 266750. 275500. 275500. 275500. 275500. 275500. 28600. 295000. 295000. 295000. 295000. 295000. 295000. 295000. 295000. 295000. 295000. 295000.			TEST FREG= 6.00 HZ	.00 HZ.		
NU. CYCLES 29 20 266750. 30 272500. 33 272500. 33 272500. 34 272500. 35 272500. 36 272500. 37 28600. 42 295100. 43 296600. 48 299100. 48 299100. 48 299100.	AMBIENT AIR					
29 24250. 31 272500. 32 272500. 33 272500. 34 272500. 35 272500. 36 272500. 37 272500. 38 29500. 42 295000. 43 295000. 44 22 295000. 45 295000. 46 299100. 48 299100. 48 299100.	A (MEASURED)	A (RECRESSION)	MULT. CORR. COEFF	K-MAX.	DELTA K	DACES
30 269660. 31 272500. 33 272500. 34 275200. 35 275200. 36 276600. 37 295000. 42 295000. 42 295000. 43 295000. 44 22 295000. 45 295000. 46 299100. 48 299100.	1.610	1.807	0.999735	11.68	16.63	1.377E-65
31 272500. 33 275200. 34 275200. 35 275200. 36 275200. 36 275200. 37 275200. 42 275200. 43 275200. 44 275200. 45 297100. 46 299100. 48 299100.	1.685	1.856	0.999702	12.22	17.10	1.5056-05
22 275200. 33 279800. 34 282100. 35 278000. 37 285000. 39 292000. 41 295000. 42 295000. 43 295000. 44 295000. 45 295100. 45 295000.	1.980	1.977	5426660	12,50	17-61	1436-65
33 279800. 35 282100. 35 282100. 36 285000. 37 285000. 40 295000. 41 295000. 42 295000. 44 295000. 45 295100. 45 297800. 46 299100.	2.065	2.066	0.999756	12.94	11.12	1.786-65
24 282100. 35 284000. 36 286000. 37 286500. 40 295700. 41 295700. 43 295700. 44 295700. 45 295700. 46 299100. 48 299100.	2.240	2.243	992 666.0	13.64	19.15	2-1138-45
25 20000. 36 20000. 37 20000. 39 20000. 40 295000. 41 295000. 42 295100. 44 295000. 45 299100. 46 299100.	2,340	2,342	0.999578	14.10	19.76	2-346-5
36 286000. 38 290000. 39 292000. 40 295000. 42 295000. 43 295000. 44 299100. 45 299100. 46 299100.	•	2.432	975666-0	14.50	20.29	2.552E-05
28 29000. 39 292000. 39 292000. 41 295000. 42 295100. 44 293100. 45 293100. 46 293100. 47 293100.	2,535	2.533	0.998925	14.41	20.92	2-2666-05
28 292000. 40 292000. 41 295000. 42 295000. 44 299100. 45 299100. 46 299100.	2.675	2,684	9.99952	15.63	21-88	3.3166-05
292000. 40 295000. 42 295000. 43 295100. 44 293100. 45 293100. 49 293100. 40 293100.	2.785	2.784	546866-0	16-10	22.54	3.7366-65
40 295000. 42 295000. 43 295000. 44 29100. 45 29100. 47 298600. 48 299100.	2.950	2-942	0.998504	16.67	23.62	4-4328-45
41 295000. 44 295700. 44 297100. 45 297100. 47 298400. 48 299100.	3.110	3,131	0.998261	17-86	25.00	5.33% -05
42 295700. 44 291100. 45 297100. 46 297800. 47 298600. 48 299100.	~	3.240	925866-0	10.45	25.M	6.163E-05
43 296400. 44 297100. 45 297800. 49 298600. 48 299100.	3.330	3.224	0.999331	18.93	26.51	90-3587-9
44 297100. 45 297800. 46 298400. 47 298600. 48 299100.	3.420	3.424	564766.0	19.53	27.34	7.9546-05
45 297806. 46 298400. 47 298600. 48 299100.	3.530	3-533	0.999077	20-21	28.30	9.1206-05
44 298400. 47 298600. 48 299100.	3-660	3-666	7996660	21.10	29.52	1-1166-04
47 298600. 48 299100.	3.310	3.809	0.999813	22.13	30.96	1-3775-44
46 299100.	3.6	3.86%	0.999913	22.53	31.54	14146-06
700300	4.010	4.014	0.997500	23.77	33.27	1.756-4
977747	080-4	4.078	992866-0	24.93	34.06	2-029E-04
50 299500.	4-150	4-161	0.998527	25.10	35.13	2.365E-04
51 299750.	4.285	4.275	9094660	26.22	36.71	3-755-66
52 289950.	97.4	4.403	0,993747	27.62	38.67	4-0516-04
53 300150.	4.545	4.581	0.993942	29.86	41-60	5.3496-04
54 300360.	4.745	4.755	0.997462	32.45	45.43	7.317E-04
55 360356.	4.835	4.635	46666°0	33.42	47.35	9-1196-04

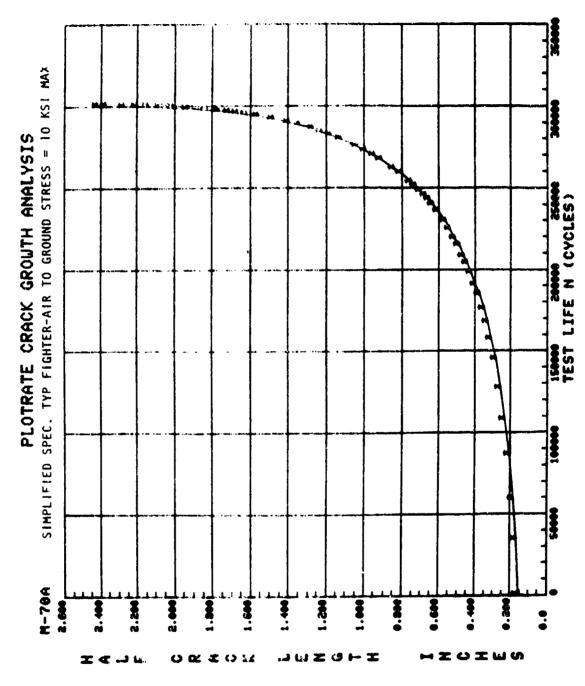


Figure 89. Crack growth curve for test M-70A.

TABLE 89. INTA TABULATION FOR TEST M-71

TYPICAL FIGHTER, INSTRUMENTATION AND NAVIGATION, MAX STRESS = 14 KS SPECIMEN NO.: M-71

WE 6.000 IN. ANE 0.0 IN. 8= 0.250 IN. CCT SPECIMEN

TEST FREQ= 6.00 HZ. PHAX= PAINE

NO.	CYCLES	A (MEASUR ED)	A (REGRESSION)	Mill T. COBR. COFFE	K-MAX	DELTA K	46776
-	0	0-285	0.205			•	3
		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		47E944*0	4.33	11.14	7 - 8 13E-06
•	-0000	0.363	0.520	0.996499	9.0	11.60	クルスとと
m	10000	0.340	0.337	0.988854	10.20	11.90	1-7836-0
→	20000	0.370	0.365	212240	10.62	12 30	
•	90000	000	606	1111111	300	14037	710001
١.	• • • • • • • • • • • • • • • • • • • •	0.50	0.393	112366.0	11.03	12.87	1.745-2
0	*0000	625-0	0.430	0.996428	11.54	13.46	2.2345-0
7	.000	0.470	0-466	0.999276	12.03	14.03	2.4075-6
•	54000 .	0.560	0.503	0.999146	12.40	14.47	2 0165
•	61000.	0.550	0.550	755000		10.11	
	48000	304	707 0		1000	67-61	2-1225-0
2:		3000	0.376	06: 165-0	13.63	15.90	3.6825-06
1	15000	0.650	0.649	0.997050	14.23	16.60	4-2115-04
77	82000.	06.700	602.0	0.996356	14.90	17.36	4.7276-0
13	88000.	0.130	0.767	0.998425	15.52	18.11	4 4 4 6 6 1 9 4
+ 7	93000	0.830	0.825	0.998751	16.12	19 61	36967
15	98600.	0-8-0	608.0	774600 0			367000
7	101200		• 600	**C#***	10.01	74-00	6-1361-0
o !	200 000	C. 440	0.939	0.998778	17.25	20-13	7.2226-06
	100/001	0.995	0.997	0.998863	17.82	20.78	E-353E-06
	1072001	1.060	19041	0.998707	18.42	21.49	9 -0 4eF-0e
<u></u>	113000.	1.125	1-125	0.999912	19-01	22-13	10265-6
20	116000.	1.1%	1-191	0.999402	19.61	22.68	1.1576-05
. 23	117500.	1.225	1.226	9266660	19.92	22 24	1 1 1 1 1 1 1
25	120000.	1.290	1.290	AC4600.0	20.00		71170
23	122000	1 246	2 24.3		7.00	74.057	CA-3007-1
2 3	• • • • • • • • • • • • • • • • • • • •		1.040	C-598505	20.96	24.45	1.335E-J
5	10000	204-1	1.397	0.998267	21.43	25.00	1.411E-05
52	125500.	1.430	1.438	9852560	21.79	25-42	1.5446-05
5 8	127000.	1.485	1.482	0.998624	22.18	25.37	1 4645
27	128900.	1.545	1.546	283800 0	,		
	12000			0.746362	71.77	16.07	1-7e16-05
9				CF1666	•		

TABLE 89. DATA TABULATION FOR TEST M-71 (CONT)

TYPICAL FIGHTER, INSTRUMENTATION AND MAVIGATION, MAX STRESS = 14 KSI M-71 SPECIMEN NO.:

		PMA X=		TEST FREG= 6.	6.000HZ.		
ENVIRONMENT CONDITION:	COMOITIONS	AMBIENT AIR					
Q.	CYCLES	A LINEASUR ED 1	ACREGRESSION	MULT. CORR. COFFE	X-MAX	OFITA K	#0/41.
56	131000.	1.625	1-625	0.999549	73.60		2010
30	132000	1.665	1-667	C42000-0	23.76	27.70	7 1416-04
31	133000.	1.710	1-711	0.999267	26.16	28-16	2 2505-05
32	134000		1-759	1870000	24.54	28 43	2 2721-06
33	135000.	1.810	1.808	0.999837	24.96	20.07	2-2135-02
37	136000.	1.855	1.856	655666"0	25.37	29-60	2.5405-05
35	137800.	1-950	1-949	2996650	26-17	30.53	2-8C4F-05
*	139000.	2.015	2.018	0036660	26.76	31.23	3-0116-05
37	150000.	2.080	2.079	0.999476	27.29	31.64	3-317E-05
36	141000.	2-150	2-146	6.999703	27.88	32.53	3.577E-05
39	142000-	2-215	2-224	0.999364	28.56	33.32	3-648E-05
60	143700.	2,365	2.361	0.599389	29.79	34.76	4-300E-65
14	144700.	2.455	2-448	0.998674	30.59	35.69	4.701E-05
42	145950.		2.571	0.998295	31.73	37.02	5.322E-05
43	1560%	2.665	2.668	0.999406	32.66	36.11	6-040E-05
\$	147700.	2.770	2.768	0.999945	33.65	39.26	6-878E-05
4 5	148420.	2.870	2.872	0.999175	34.71	40.49	7-6108-05
95	149000.	2 4 9 6 5	2,965	£09666*0	35,68	41.62	8-7791-05
	149570.	3.065	3.068	6-999874	36.79	42.92	9 .630E-05
3	150030.	3.160	3.162	9066660	37.85	44.15	1.078E-C4
- 49	•	3-255	3,249	0.998657	39.86	45.34	1-209E-04
3	150920.	3.370	3.372	0.597455	40.36	47.08	1-435E-04
2	151335.	3.480	3.495	0.996565	41.94	48.93	
25	151563.	3.575	3.575	0.996309	43.03	50-20	2-161E-04
23	151804.	3.675	3.662	0.999686	44-54	51.97	2.578E-64
*	151973.	3.775	3.773	0.999489	45.91	53.56	2-950E-04
25	152105.	3,965	3.905	0.996503	48.02	56.03	3-651E-U4
26	152304	3.990	3,995	0.995.043	40 KB	70 23	4 / OF C - O.

TABLE 89. INTA TABULATION FOR TEST M-71 (CONCL.)

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	TEST FREG= 6.000HZ.		
W= 6.500 IN. AN= 0.0 IN.	FR EQ=	:	
0.0	TEST	: : : : : : : :	
AR			
O. IN.		•	
00°9 =#			
1		T AIR	
8= 0.250 IN.	PHEXE	ION: AMBIENT AIR	
-	_	ENT COMDITION:	
CCT SPECIMEN	u	ENVIRONMENT COMOSTI	ſ
133	PRINE	EWI	•

0.540E-04 9.553E-04 1.394E-03 2.037E-03
DELTA K 60.05 63.21 67.50 71.95
51.47 54.18 54.18 57.86 61.67
MULT. CORD. COEFF 0.960980 0.976411 0.982476 0.988156
A (REGRESSION)
A(MEASURED) 4-085 4-205 4-335 4-550
CYCLES 182421. 182527. 152606. 182652.
6000

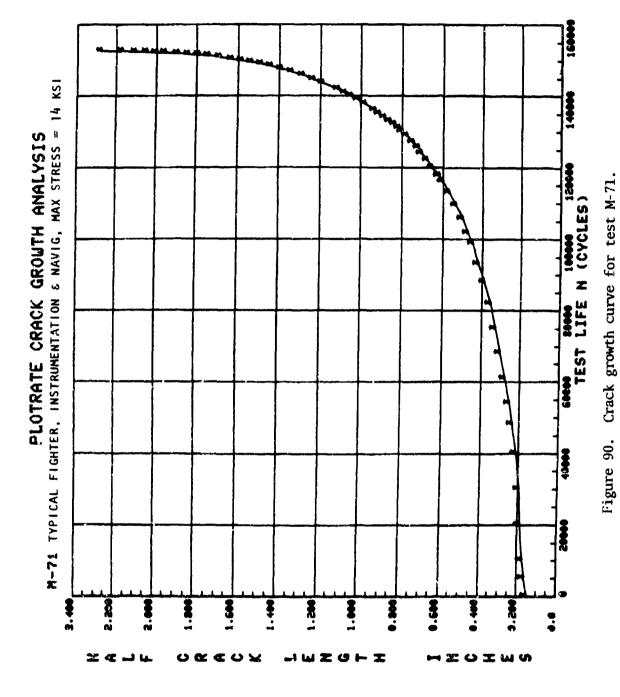


TABLE 90. DATA TABULATION FOR TEST M-72

TIPICAL FIGHTER, COMPOSITE MISSION, MAX STRESS = 19 KSI SPECIMEN NO.:

	PHAX=		TEST FREQ= 6.000HZ.	.000HZ.		
ENVIRONMENT COMDITION:	: AMBIENT AIR					
CYCLES	A (MEASURED)	A (REGRESSION)	MULT. CORR. COEFF	X-MAX	DELTA K	DA/DM
.	u.306	0.310	0.96573	13.29	15.39	9-360E-0
1000	0.345	0.327	0.989414	13.64	15.00	7-372E-06
. 0009	0.405	0.461	0.992576	15.13	17.52	8-209E-06
9750.	0.460	0-466	0.994756	16.32	18.89	9.752E-06
12700.	0.525	0.525	0.999620	17.34	20.08	1.1256-05
14750.	0.575	0.574	244866.0	18.14	21.01	1.3736-65
16600.	0.625	0.628	0.997739	18.99	21.99	1-61SE-05
16250.	0.675	0.682	999866	19.82	22.95	1.949E-05
19000.	0.715	0.710	0.999193	20.24	23.43	2-1235-05
20350.	0.770	0.772	0.999209	21.13	24.46	2.461E-05
21350	0.825	0.825	0.999251	21.88	25.33	2.661E-05
22250.	0.675	0.875	911866.0	22.56	26-13	2-714E-05
23000.	0.970	0.918	0.959564	23.14	26.75	2.860E-05
23600.	996.0	0.962	696865.0	23.72	27.47	2.962E-05
25000.	1.030	1.031	0.997537	24.62	28.50	3-3996-05
25800	1.065	1.085	0.998974	25.29	29.29	3.901E-05
.00992	1.145	1.150	0.999535	26.11	30.23	4.435E-05
27570.	1.245	1.244	0.999563	27.26	31.56	5-215E-05
28300.	1.330	1.324	0.999025	28.23	32.69	5.950E-05
25070.	1.415	1-422	0.597604	29.39	34.03	7-176E-05
29500	1.475	1.482	019966-0	30.08	35.85	8 -0.27E-05
.00852	1.530	1.529	0.999500	30.64	35.44	8.685E-05
30306.	1.630	1.621	8016660	31.72	36.73	1.0246-04
30800	1.725	1.730	0.999317	32.98	38-19	1.1626-04
31300.	1.650	1.853	122866-0	34.41	39.84	4-407E-04
31700.	1.975	1.969	0.999334	35.75	41.39	
32100.	2.095	2.106	0.998661	€7.38	43.28	1-957E-04
30,00						

TABLE 90. LATA TAXULATION FOR TEST M-72 (CONCL)

FCIMEN NO.: M-72 TYPICAL FIGHTER, COMPOSITE MISSION, MAX STRESS = 19 KSI

		,		MO790				•		4.735E-04	5-549E-04	40-100-4	•	-	.	9.T32E-04	1.352E-03	•	i		4-12-63		
	1			DELTA, K	46.22	47.73	7.0 4.7		20.94	54.6	55.61	57.58		28.62	01-09	95.19	64.32		117400	74.0)	75.08	74.46	-
		.0СЭН2.		K-MAX	39.92	76 17		71.74	43.99	84.44	48-03	7.07	47.61	50.71	51.90	53.16	84 48		21-15	67.19	64.84	74.01	Ť 0 • 0 0
	AN= 0.0 1%.	TEST FREG# 5.0C3HZ.		MALT. CORS. COEFF	0.000506	1170700	1111111	0.959751	0.998031	0.998533	0.0064.80	000000 O	0.955055	0.995587	0.598953	1991661		77001600	196815-0	0.985669	904980°C		761666-0
	W= 6.000 IN:	u		ALSECAFICAL	200 CO 100 CO 10	416.4	7.4.20	2.24	2-642	2.84.7		26.4.20	7.0% 	3,120	3, 196	3 275	1 · · · ·	3.36.8	3.506	3-724	000 6	2.070	3.941
	0.250 IN.	PHAX=	AMBIENT AIR	1020130307	ALANCA TOTAL	2.513	2-430	2.540	2-645	2 5 2 5		2.975	3.055	3,115	3,165	400	7050	9.370	3.490	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	943	2.840	3.940
	# #		CON01110N:	3	CAPER	32500	3,600.	22000	22150	00000	3000	33500.	33600.	33650	22400	00000	33720.	33 A00.	33850.	23000	• 00.00	33925.	33430.
אור זעכא שפיי	CCT SPECIMEN	PHINE	ENVIRONMENT CONDITION:	;	2	54	30		• •	75	53	34	8,4	` *	9 6		38	36	. 4	;	-1 ·	42	43

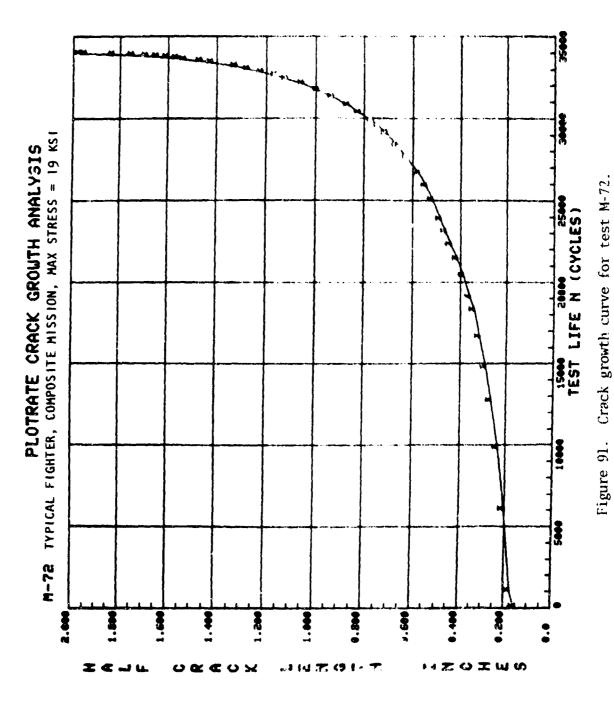


TABLE 91. DATA TABULATION FOR TEST M-72A

SIMPLIFIED SPECTRUM, TYP FIGHTER-COMPOSITE MISSION, MAX STRESS = 14 KSI SPECIMEN NO.:

		PHAX=		1EST FREU= 6.000H2	.000H2.		
ENVIRONMENT	CONDITION:	AMBIENT AIR					
NO.	CYCLES	A (MEASURED)	A(REGRESSICM)	MULT. COKK. CUFFF	K-KAX	DELTA	1000
	•0	0.330	0.330	0.9998.41		2 2 2	10 M
~	8800.	0.375	0.374	0.998645	4.10	64.5	2 26m E-04
m	14400.	017-0	0.404	755560	4-26		3 - 3 3 4 F - Chi
4	24000-	0.476	0.478	0.993745	4.64	6.30	4-5(405-06
ĸ	29100.	0.526	0.527	119966"0	14.4	6.70	3-6445-06
•	32800.		0.571	0.994530	5.08	96-9	5.992E-66
_	36800.	0.635	0.626	0.996145	5.32	7.32	6-7535-06
80 ·	40600	0.640	0-681	ú.594305	5.56	7.64	1-5145-06
•	44800	0.730	0.739	0.996012	5.80	16-1	8-501E-66
01	48400·	0.800	0.801	844664.0	6.05	8.31	1-0-66-05
11	20600.	0.652	0.850	0.996238	47.9	3.56	1.0785-65
12	52500		0.895	0.997326	14-9	8.01	1-1755-65
13	24200	0.942	0.935	0.996267	95.9	9.02	
4	56700.	•	2.650	666546-0	6.18	9.33	
57	56500.	٦.	1.049	0.997403	16.9	65.6	
9 :	59900.	1.095	1.095	9578660	7.14	9.63	
2	.00719	1-156	1-148	0.999107	7.32	10.01	1.860E-05
27	92400	1.195	1.194	0.996928	7.48	10.29	1.974-05
61	63600.	1.245	1.243	C-999117	7.65	10.52	2.0076-05
2 :	6480C.	1.285	1.289	915966*0	7.80	10.73	2.007E-05
12	90099	1.342	1.339	0.954136	1.57	10.76	2 - 2 32 E - 45
22	67200.	1.390	1.393	0.999578	8.15	11.21	2-427t-05
23	65400.	1.455	1.4%	9696660	8.36	110.47	2-6715-05
42	6 5600.	1.520	1.520	693666.0	6.57	11-79	2-693E-05
52	71200.	1.620	1.618	529666.0	¥8.8	12.23	3-2:6E-05
92	72700.	1.720	1.720	0.999731	5.48	12.68	3.1076-05
27	74100.	1.8.5	1.828	0.994533	15.6	13.16	40-3077 7
						2007	

TABLE 91. INTA TABULATION FOR TEST M-72A (CONCL.)

SIMPLIFIED SPECTRUM, TYP FIGHTER-COMPUSITE MISSION, MAX STRESS = 14 KSI SPECIES NO.: N-72A

PHIN=		FMAX=		TEST FREUS 6.000HZ	-2H000-		
ENVIRONMENT CONDITION:	CONDITION:	AMBIENT AIR					
œ.	CYCLES	A (MEASUR ED)	A (REGRESSION)	MARTA CORK. CHEFF	X-M-X	DELTA	20740
53	76300.	C	2.032	0.999837	16.24	14.23	5-545-05
30	17034.	2.115	2.115	47E6660	10.52	14.46	60-160F-05
31	77399.	2.225	2.227	T<8999.0	10.89	16.98	6.8 Tri-05
32	78587.	2.325	2-324	9059650	11.22	15.43	7-3476-65
33	79100.	2.410	2-406	199366-0	11.50	15.62	6 -467E-05
¥	78665.	2.495	2.509	C.9990è2	11.01	16.32	4-69at-65
35	\$ 022 0 •	2.630	2-623	0.999110	12.28	10.68	1.1305-0
%	80755.	2.755	2.749	698966-7	12.75	11.53	1-3275-64
37	\$1212.	2.865	2.879	0.997863	13.25	18-41	1.5336-64
8 70	B1549.	2.975	2-961	0.999235	13-66	18.79	1.71GE-64
%	61809.	3.060	3.072	0.998943	14.03	19-34	1.919E-U-
40	B2017.	3.160	3.156	0.996232	14.39	19.79	2-1336-04
7	62340.	3,245	3.295	G-99644	15.03	20.67	2.6284-64
7.5	62500.	3.380	3.379	0.999024	15.41	21.19	3-046E-04
*	82660.	3.475	3.480	7 213600	15.90	23.67	3-5366-04
‡	82800.	3.590	3.564	0.999095	16.44	75.60	4.166E-64
45	62950.	3.710	3.70£	0.496660	17.11	23.53	3.JS62-34
44	83100°	3.855	3-867	9.545666	16.30	24.63	0.6 13€-U4
47	£3200.	3.945	4-001	0.997663	18.52	26.02	8.1636-64
9	83300	4.165	4.177	0.999114	20.19	27.17	1.0487-03
9	4						

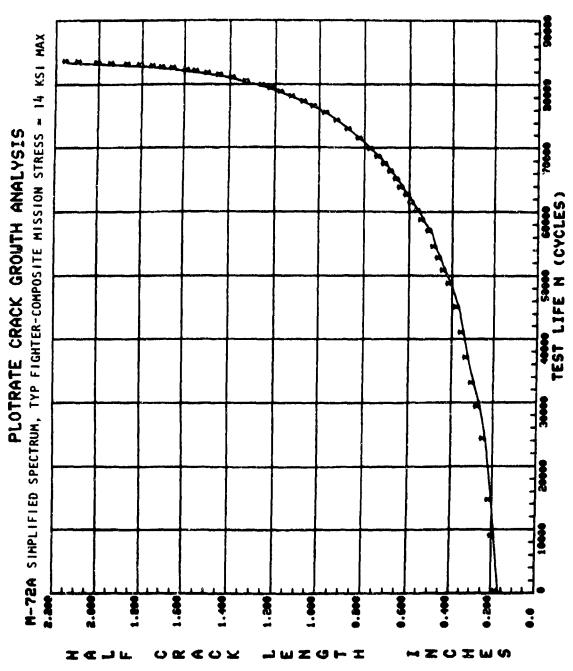


Figure 92. Crack growth curve for test M-72A.

DATA TABULATION FOR TEST M-72B TABLE 92.

ENVIRONMENT CLNDITION: AND LENT AIR LOS ACCOUNTS ACCO	CCT SPECIMEN	INEN 6=	0.250 IV.	W= 6.000 IN.	ANE C.O IN.			
CAMOITICM: AMBIENT AIR CAMOITICM: AMBIENT AIR CYCLES AMBIENT AIR O. O. 305 O. O. O. AIR DELTA K O.	PHINE		PMAX=		FR EQ=	.3COH2.		
NO. CYCLES AIMEASURID AIRECRESSION MULT. CONK. CUEFF K-MAX DELTA K 1 0.305 0.345 0.995 12 6.447 1.85 2 5500. 0.335 0.342 0.995 12 6.48 8.33 4 139000. 0.415 0.344 0.997 18 7.55 9.17 5 17900. 0.455 0.494 0.997 18 7.95 9.17 6 17900. 0.455 0.494 0.997 18 7.95 9.17 7 222400. 0.455 0.997 18 7.95 9.17 1 222400. 0.613 0.626 0.997 18 9.76 11.43 1 222400. 0.618 0.626 0.997 18 11.43 11.43 1 222400. 0.618 0.626 0.997 18 11.43 11.43 1 31900. 0.618 0.626 0.997 18 11.43 11.43 1 415000. 0.799 0.722<	ENVIRONMEN	NT CUNDITIO	AMB I ENT					
1 0. 0.305 0.305 0.993713 6.47 7.85 3 93000. 0.335 0.342 0.993761 6.70 6.33 4 139000. 0.415 0.444 0.99718 7.55 9.17 5 139000. 0.415 0.444 0.99718 7.55 9.17 6 222400. 0.55 0.454 0.997847 7.55 9.17 7 254000. 0.55 0.554 0.997847 1.20 9.60 9 337000. 0.615 0.626 0.99782 9.59 10.43 10 354800. 0.626 0.99782 9.74 11.32 11 33700. 0.660 0.722 0.99782 9.74 11.32 11 33700. 0.725 0.722 0.99783 11.32 11.32 12 401700. 0.895 0.99784 10.03 12.10 13 401700. 0.696 0.99784 11.35	MON	CYCLES		A (REGRESSION)	MULT. CONR. CUEFF	K-MAX	DELTA K	DVON
52500- 0.335 0.342 0.9957E7 6.86 8.33 93000- 0.345 0.9957E7 7.37 6.9977E 7.37 6.37 139000- 0.456 0.494 0.9977E 7.96 9.17 17900- 0.450 0.496 0.9977E4 7.96 9.11 222400- 0.555 0.496 0.9977E4 7.96 9.29 22400- 0.555 0.525 0.997E4 7.96 9.29 22400- 0.556 0.997E4 9.34 11.32 33900- 0.685 0.9967E 9.74 11.32 373900- 0.687 0.9967E 10.43 12.18 40170- 0.785 0.787 0.9967E 11.32 40170- 0.686 0.9967E 10.46 12.18 415000- 0.687 0.9967E5 11.18 14.43 415000- 0.995 0.9967E5 11.46 14.43 451500- 1.360 0.99604 11.46	-	•	0.305	0.305	0.993733	14.9	7.85	3.6835-07
93000. 0.356 0.374 0.997095 7.17 6.70 139000. 0.415 0.434 0.997247 7.55 9.17 139000. 0.456 0.494747 7.96 9.17 139000. 0.55 0.496 0.997497 7.55 9.17 222400. 0.55 0.496 0.997497 8.27 10.05 224000. 0.55 0.626 0.997492 9.32 11.32 339700. 0.660 0.626 0.99748 9.74 11.32 339700. 0.775 0.722 0.99658 9.74 11.32 34800. 0.775 0.773 0.99678 9.74 11.32 40170. 0.650 0.996870 10.03 12.18 12.21 41500. 0.690 0.996975 11.30 14.45 14.45 425300. 0.996 0.996049 11.45 14.45 14.45 444900. 11.15 1.045 1.045 11.45 14.45 <td>~</td> <td>52500.</td> <td>0.335</td> <td>ù.342</td> <td>0.995767</td> <td>98-9</td> <td>8.33</td> <td>3-627E-67</td>	~	52500.	0.335	ù . 342	0.995767	98-9	8.33	3-627E-67
139000. 0.415 0.414 0.99771b 7.55 9.17 139000. 0.454 0.99747 17.90 9.60 222400. 0.550 0.454 0.99747 b.27 10.05 224000. 0.515 0.526 0.997497 b.27 10.05 312000. 0.615 0.626 0.99652 9.32 11.32 312000. 0.775 0.773 0.783 0.99655 10.43 12.10 373900. 0.775 0.783 0.99770 10.46 12.70 401700. 0.775 0.783 0.99655 10.46 12.70 415000. 0.775 0.783 0.996185 11.30 12.12 415000. 0.995 0.996 0.996185 11.30 14.43 42500. 0.996 0.996185 11.30 14.43 14.43 42500. 0.996 0.996185 11.30 14.43 14.43 42500. 1.1045 1.104 1.104 <td< td=""><td>e</td><td>93000</td><td>0.350</td><td>0.374</td><td>0.947045</td><td>7.17</td><td>6.30</td><td>4-191c-07</td></td<>	e	93000	0.350	0.374	0.947045	7.17	6.30	4-191c-07
199700. 0.450 0.997247 7.90 9.60 222400. 0.550: 0.494 0.997497 8.27 10.65 222400. 0.535 0.534 0.534 9.32 10.65 224000. 0.515 0.626 0.997497 8.27 10.643 312000. 0.618 0.626 0.997648 9.74 11.82 312000. 0.620 0.627 0.996776 10.03 12.18 312000. 0.725 0.722 0.996776 10.03 12.18 312000. 0.725 0.722 0.996776 12.18 12.18 412000. 0.726 0.996776 10.03 12.18 13.65 425300. 0.690 0.99676 0.996073 11.17 13.56 448900. 1.100 1.100 1.100 14.05 14.05 14.05 45400. 1.100 1.100 1.100 1.100 14.05 14.05 14.05 45400. 1.100 <t< td=""><td>•</td><td>139000.</td><td>0.415</td><td>0.414</td><td>0.997718</td><td>7.55</td><td>6.17</td><td>4.6654-07</td></t<>	•	139000.	0.415	0.414	0.997718	7.55	6.17	4.6654-07
222400. 0.5C. 0.496 0.997497 b.27 lu.0b 224000. 0.535 0.554 0.495393 9.59 lu.43 312000. 0.615 0.626 0.997648 9.74 ll.32 339700. 0.620 0.682 0.99655 ll.33 ll.31 339700. 0.775 0.722 0.99655 ll.46 ll.31 339700. 0.775 0.723 0.99655 ll.46 ll.18 37900. 0.775 0.723 0.99770 ll.71 ll.21 401700. 0.690 0.99785 ll.37 ll.36 415000. 0.995 0.99786 0.99786 ll.405 425000. 1.100 ll.16 0.998077 ll.31 ll.44 459400. 1.150 ll.143 0.998077 ll.31 ll.44 459400. 1.200 ll.143 0.998073 ll.47 ll.44 459400. 1.250 ll.34 ll.42 ll.44	<u>د</u>	179700.	0.450	0.454	178166.0	7.90	69.4	5.216E-07
254000. 0.534 0.554 0.495393 9.59 No.43 312000. 0.615 0.626 0.995928 9.32 11.32 312000. 0.615 0.626 0.995928 9.74 11.32 317900. 0.725 0.722 0.722 0.723 12.18 373900. 0.775 0.725 0.99678 10.43 12.18 405000. 0.945 0.825 0.99678 10.45 13.05 415000. 0.945 0.996 0.99675 11.37 14.43 425300. 0.995 0.99607 11.37 14.43 14.43 432600. 1.045 1.036 0.99607 12.12 14.43 451500. 1.100 1.100 0.99607 12.51 14.43 454900. 1.250 1.143 0.99601 12.51 14.43 45400. 1.250 1.250 0.99601 13.43 16.49 451900. 1.250 1.250 0.99603 <t< td=""><td>•</td><td>222400</td><td>0.500</td><td>0.496</td><td>144166-0</td><td>6 .2 7</td><td>1ú.05</td><td>6-34-6-61</td></t<>	•	222400	0.500	0.496	144166-0	6 .2 7	1ú.05	6-34-6-61
312000. 0.615 0.626 0.995628 9.32 11.32 339700. 0.660 0.682 0.997648 9.74 11.82 359700. 0.725 0.722 0.99655 10.03 12.18 373900. 0.775 0.722 0.99675 10.46 12.70 401700. 0.690 0.995 0.9967 10.75 13.05 401700. 0.690 0.995 0.9967 11.17 13.05 401700. 0.995 0.996 0.99745 11.17 13.05 415000. 0.995 0.996 11.17 13.05 432600. 1.045 1.036 0.998 14.75 14.45 451500. 1.150 1.148 0.998 12.51 15.26 451500. 1.250 1.250 0.998 13.31 15.56 473400. 1.250 1.250 1.349 16.89 14.26 473400. 1.360 1.360 0.99613 14.22 17.26 </td <td>~</td> <td>254000</td> <td>0.535</td> <td>0.534</td> <td>6.645343</td> <td>9.59</td> <td>10.43</td> <td>7.1276-67</td>	~	254000	0.535	0.534	6.645343	9.59	10.43	7.1276-67
339700. 0.680 0.682 0.997648 9.74 11.82 359700. 0.725 0.722 0.99655 10.03 12.18 35800. 0.725 0.722 0.996570 10.03 12.18 385700. 0.830 0.99678 10.05 13.05 401700. 0.845 0.866 0.99745 11.17 13.05 41500. 0.995 0.99678 11.17 13.56 14.45 14.45 422600. 1.045 1.036 0.99804 12.12 14.45 14.45 454900. 1.104 1.036 0.99804 12.12 14.45 15.26 454900. 1.150 1.168 0.99804 12.12 15.26 15.26 451500. 1.250 1.148 0.99804 15.31 15.56 477000. 1.250 1.304 0.99605 14.22 17.26 48700. 1.430 1.364 0.99605 14.22 17.26 48700.	•	312000.	0.615	0.626	0.995928	9.32	11.32	9.952E-61
354806. 0.725 0.722 0.996655 10.03 12.18 373900. 0.775 0.783 0.998770 10.46 12.70 401700. 0.630 0.825 0.998770 10.46 12.70 401700. 0.696 0.686 0.9978195 11.17 13.56 415000. 0.995 0.996 0.9978195 11.17 14.05 425300. 0.995 0.996 0.9978195 11.17 14.05 432600. 1.045 1.036 0.998077 12.12 14.05 44900. 1.160 1.148 0.998077 12.57 14.16 45150. 1.156 1.148 0.998077 12.57 15.26 45960. 1.250 1.250 0.996014 12.51 15.56 477000. 1.250 1.364 0.997043 13.45 16.96 487000. 1.340 1.386 0.997043 14.22 17.61 487000. 1.496 1.466 0.996649	Φ	339700.	0.680	0.682	0.997648	9.74	11.02	1.3106-06
373900. 0.775 0.783 0.998770 10.46 12.70 385700. 0.830 0.825 0.996786 10.75 13.05 401700. 0.846 0.99785 11.37 13.56 415000. 0.945 0.956 0.998195 11.37 14.05 425300. 0.995 0.996 0.998195 11.88 14.43 435500. 1.045 1.036 0.99807 12.12 14.43 451500. 1.160 1.168 0.99807 12.51 15.26 459400. 1.200 1.148 0.99807 12.51 15.56 459400. 1.200 1.149 0.99615 13.11 15.56 459400. 1.250 1.250 0.99615 13.43 16.89 459400. 1.250 1.304 0.99615 13.43 16.89 451400. 1.340 1.334 0.996104 14.22 17.24 45100. 1.340 1.346 0.996469 14.25	2	354800.	0.725	0.722	6-996655	10.03	12.18	1.5076-06
285700. 0.830 0.825 0.998786 10.75 13.05 401700. 0.846 0.89785 11.17 13.56 415000. 0.995 0.997813 11.57 14.05 425300. 1.045 1.036 0.998195 11.88 14.43 432600. 1.045 1.036 0.99804 12.12 14.43 451500. 1.150 1.168 0.99804 12.51 15.26 459400. 1.200 1.143 0.99757 13.11 15.56 473400. 1.250 1.250 1.250 1.343 16.30 477000. 1.295 1.304 0.99704 13.45 16.69 491000. 1.340 1.346 0.998453 14.52 17.26 493000. 1.430 1.434 0.998469 15.60 17.99 493000. 1.430 1.456 0.998469 15.60 17.99 512000. 1.205 1.711 0.993226 16.49 26.63	~	373900.	0.775	0.783	0.998770	10.46	12.70	1.7296-26
401700. 0.690 0.966 0.997813 11.17 13.50 415000. 0.945 6.950 0.997813 11.57 14.05 425300. 0.996 0.998195 11.88 14.43 43500. 1.045 1.168 0.99807 12.57 14.72 44900. 1.160 1.168 0.99807 12.51 15.26 44900. 1.150 1.143 0.99807 12.51 15.26 451500. 1.200 1.143 0.99601 12.51 15.56 466600. 1.250 1.250 0.99715 13.11 15.95 473400. 1.250 1.304 0.99707 13.43 16.49 481900. 1.340 1.336 0.99707 13.94 16.96 481900. 1.430 1.486 0.99843 14.62 17.64 493000. 1.495 1.486 0.998469 15.61 18.95 505500. 1.205 1.711 0.993226 16.49	21	385700.	0.830	0.825	0.996768	10.75	13.05	1-1/1/1-06
415000. 0.945 6.950 0.997113 11.57 14.05 425300. 0.995 0.996 0.996 11.08 0.996195 11.43 12.12 14.72 444900. 1.100 1.106 0.996077 12.57 15.26 14.72 444900. 1.150 1.143 0.996077 12.57 15.26 15.26 459400. 1.200 1.143 0.996074 12.51 15.56 15.56 459400. 1.250 1.250 0.997527 13.11 15.56 16.49 473400. 1.250 1.304 0.996151 13.43 16.49 16.49 473400. 1.340 1.336 0.996438 14.22 17.26 487000. 1.430 1.433 0.996449 14.62 17.99 493000. 1.496 1.439 0.996469 15.61 18.99 505500. 1.620 1.71 0.993226 16.69 15.60 512000. 1.71 0.993226 <td>13</td> <td>401700.</td> <td>0.650</td> <td>0.866</td> <td>0.997955</td> <td>11.17</td> <td>13.56</td> <td>2.175E-Jo</td>	13	401700.	0.650	0.866	0.997955	11.17	13.56	2.175E-Jo
425300. 0.995 0.996 95 11.88 14.43 432600. 1.045 1.036 0.998093 12.12 14.72 444900. 1.100 0.998093 12.12 15.26 444900. 1.100 0.998073 12.57 15.26 459600. 1.200 1.143 0.997527 13.11 15.56 473400. 1.250 1.250 0.99704 13.43 16.49 477000. 1.340 1.336 0.99704 13.94 16.49 461900. 1.340 1.336 0.99704 13.94 16.49 467000. 1.433 0.99803 14.62 17.64 493000. 1.433 0.99803 14.60 17.99 505500. 1.620 1.71 0.993226 16.49 26.63 512000. 1.702 1.71 0.993226 16.49 26.63	=	415000.	0.945	6.950	0.997333	11.57	14.05	2.347E-06
432600. 1.045 1.036 0.998093 12.12 14.72 444900. 1.100 1.108 0.998077 12.51 15.26 451500. 1.150 1.143 0.996014 12.51 15.56 459400. 1.200 1.197 0.997527 13.11 15.56 466600. 1.250 1.250 0.997027 13.43 16.30 477000. 1.340 1.336 0.997074 13.39 16.49 481900. 1.340 1.364 0.997074 13.39 16.42 17.26 481900. 1.390 1.384 0.998638 14.22 17.86 493000. 1.495 1.458 0.998638 14.50 17.81 505500. 1.620 1.711 0.993226 16.69 19.54 512000. 1.705 1.712 0.993226 16.49 26.63	15	425300.	966-0	0.9%	0.998195	11.88	14.43	2.562E-06
444900. 1.100 1.100 0.998077 12.57 15.26 451500. 1.150 1.143 0.996014 12.01 15.56 459400. 1.200 1.197 0.997527 13.11 15.55 466600. 1.250 0.997527 13.11 15.56 473400. 1.295 1.304 0.99704 13.43 16.49 477000. 1.340 1.364 0.99704 13.94 16.49 481900. 1.390 1.364 0.99704 14.22 17.26 481900. 1.430 1.436 0.996938 14.22 17.61 493000. 1.495 1.466 0.996933 14.60 17.99 505500. 1.620 1.711 0.995931 16.09 18.56 512000. 1.705 1.711 0.993226 16.49 26.63	16	432600.	1.045	1.036	0-998043	12-12	14.72	2.735E-06
451500. 1.150 1.143 0.998014 12.01 15.56 459400. 1.200 1.197 0.997327 13.11 15.52 466600. 1.250 0.996151 13.43 16.30 473400. 1.395 1.336 0.997074 13.94 16.92 477000. 1.390 1.384 0.997074 13.94 16.92 461900. 1.390 1.384 0.998938 14.22 17.26 493000. 1.430 1.433 0.998938 14.50 17.61 493000. 1.627 0.998469 15.61 18.95 505500. 1.627 0.993226 15.61 18.95 512000. 1.705 1.711 0.993226 16.49 26.63	17	444900	1.100	1.108	0.998077	12.57	15.26	3.0265-36
459400. 1.200 1.197 0.997327 13.11 15.52 466600. 1.250 1.250 0.996151 13.43 16.30 473400. 1.395 1.336 0.99704 13.94 16.49 477000. 1.390 1.384 0.99707 13.94 16.92 461900. 1.390 1.384 0.99863B 14.22 17.26 493000. 1.430 1.433 0.99863B 14.50 17.61 493000. 1.495 1.466 0.99863B 14.62 17.89 505500. 1.627 0.998693 16.69 18.95 512000. 1.705 1.711 0.993226 16.49 26.63	10	451500	1,150	1.149	0.998014	12.01	15.56	3-1435-06
466600. 1.250 1.250 0.996151 13.43 16.30 473400. 1.295 1.304 0.997043 13.75 16.69 477000. 1.340 1.336 0.997074 13.94 16.92 461900. 1.390 1.364 0.996020 14.22 17.26 461900. 1.430 1.433 0.996938 14.50 17.61 493000. 1.495 1.466 0.996933 14.62 17.81 505500. 1.627 0.996931 16.69 18.95 512000. 1.705 1.711 0.993226 16.69 26.63 518700. 1.805 1.762 0.993322 16.49 26.63	19	459400	1.200	1.197	L76166.0	13.11	15.52	3.481£-26
473400. 1.295 1.304 0.997043 13.75 16.69 477000. 1.340 1.336 0.997074 13.94 16.92 461900. 1.390 1.384 0.996020 14.22 17.26 467000. 1.433 0.996438 14.50 17.61 493000. 1.495 1.466 0.996933 14.62 17.94 505500. 1.627 0.996469 15.61 18.95 512000. 1.705 1.711 0.996931 16.69 16.54 518700. 1.805 1.712 0.993226 16.49 26.63	50	466600.	1.250	1.250	0.996151	13.43	16.30	3.964c-06
477000. 1.340 1.336 0.997074 13.94 16.92 461900. 1.390 1.364 0.998020 14.22 17.26 467000. 1.433 0.998638 14.50 17.61 493000. 1.495 1.466 0.998693 14.62 17.99 505500. 1.627 0.998469 15.61 18.95 512000. 1.705 1.711 0.993226 16.69 16.54 518700. 1.805 1.762 0.993226 16.49 26.63	21	473400	1.295	1.304	0.997043	13.75	16.69	4-2916-06
461900. 1.390 1.384 0.992020 14.22 17.26 467000. 1.433 0.998438 14.50 17.61 493000. 1.495 1.466 0.998459 14.62 17.99 505500. 1.627 0.998469 15.61 18.95 512000. 1.705 1.711 0.993226 16.69 19.54 518700. 1.805 1.762 0.993226 16.49 26.63	22	477000.	1.340	1.336	410166.0	13.94	16.92	4-4166-06
487000. 1.430 1.433 0.998438 14.50 17.61 493000. 1.495 1.466 0.998459 14.62 17.99 505500. 1.627 0.998469 15.61 18.95 512000. 1.705 1.711 0.993226 16.69 26.63 518700. 1.805 1.762 0.993226 16.49 26.63	23	4£1900°	1.390	1.364	0.49£020	14.22	17.26	4.728E-06
493000. 1.495 1.486 0.998933 14.62 17.99 505500. 1.627 0.998469 15.61 18.95 512000. 1.711 0.993226 16.69 16.54 518700. 1.805 1.762 0.993226 16.49 26.63	*	467000	1-430	1.433	0.99438	14.50	17.61	5.0136-06
505500, 1-620 1-627 0.998469 15.61 18.95 512000, 1-705 1.711 0.995931 16.09 19.54 518700, 1.805 1.762 0.993226 16.49 26.63	52	493000.	1.495	1.488	0.996933	14-62	17.99	5.076£-ús
512000. 1.705 1.711 0.995931 16.09 19.54 518700. 1.805 1.762 0.993226 16.49 26.63	97	505500.	1-620	1.627	0.998469	15.61	18.95	5-5326-36
512706. 1.805 1.762 0.993226 16.49 26.63 6	27	512000-	1-705	1.711	0.595931	16.8	75.51	5-661E-06
	28	51 E706.	1.805	1.762	0.993226	16.49	26-63	97-3057-9

TABLE 92. DATA TABULATION FOR TEST M-72B (CONCL)

SIMPLIFILD SPECTKUM, TYP FIGHTER-COMPOSITE STRESS = 8 KSI MAX SPECIMEN NO.: M-728

		H= 6.000 IN.	AN 0.0 IM.			
PAIX:	PHAX=		TEST FREQ= 6.000HZ	-000HZ-		
ENVIRONMENT CONDITION:	AMBIENT AIR					
•	A (MEA SUR ED)	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	0000
·		1.837	20.99464	16.81	20.41	6-468E-04
30 533760.	1.945	1.966	0.996671	17.54	21.30	
		2.200	644666	18.90	22.95	1.0496-05
	2.355	2-359	0.999534	19.85	24.10	1-2536-05
	2.470	2.478	0.499409	20.58	24.99	1-3995-05
14 563600.	2.595	2.591	0.999863	21.29	25.85	
	2.735	2.736	0.993815	22-22	26.98	1.752E-05
	2.915	2.922	0.999612	23.48	20.51	2 -0.39E-05
	3.005	3.003	0.999816	24.06	29.21	2-16-E-05
	2.050	3-092	0.999675	24.70	30.00	2-345K-05
34 575000.	3.192	3.186	0.999475	25.43	30.86	2.5406-05
	3,285	3.290	115866.0	26.23	31.86	2-7955-65
	3.406	3.399	0.994992	27.13	32.95	3-1936-05
	3.490	3.491	0.999653	21.92	33.91	3.5%6-05
	3.665	3.612	0.999622	29.03	35,25	3.9876-05
	3.765	3.699	0.999655	59.85	36.26	4-2961-05
	3.866	3.76	0.999576	30.16	37.47	4-4885-05
	3.900	3.903	0.998477	32.00	38.85	5-254E-05
	4.000	4-002	0.999442	33-14	40.24	5-308-65
4b 591000.	4-100	4-105	0.499139	34.40	41.17	6.908E-05
	4.200	4-195	0.998653	35.59	43.22	0.097E-05
	4.295	4.304	9148400	37.14	45.69	9-7676-05
.1800.	4-400	4- 402	158166.0	38.66	46.95	1.186-6
	4.500	4.526	0.997728	40.17	49.51	1-5266-
.3 593630.	4.620	4.633	0.996246	42.75	51.91	1.931E-04
4	4.775	4.736	0.992445	45.05	7:3	2-627E-04
55 594080.	4.876	4.830	0.996104	47.23	57.35	3-303E-6
3FL /0 : 7					.,	

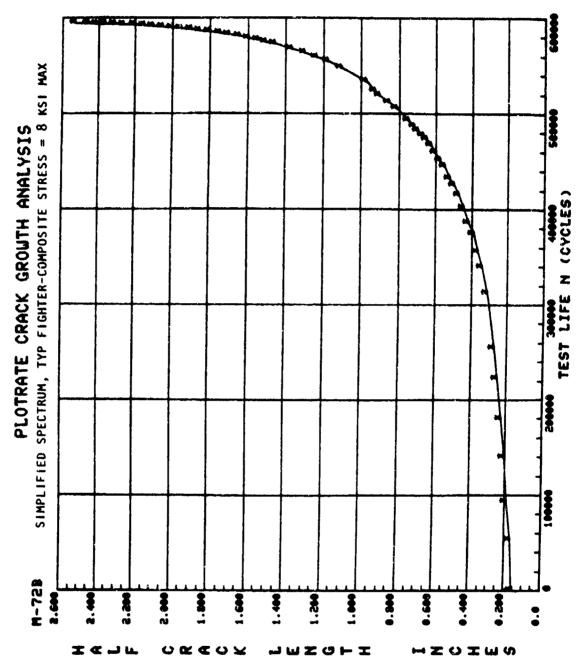


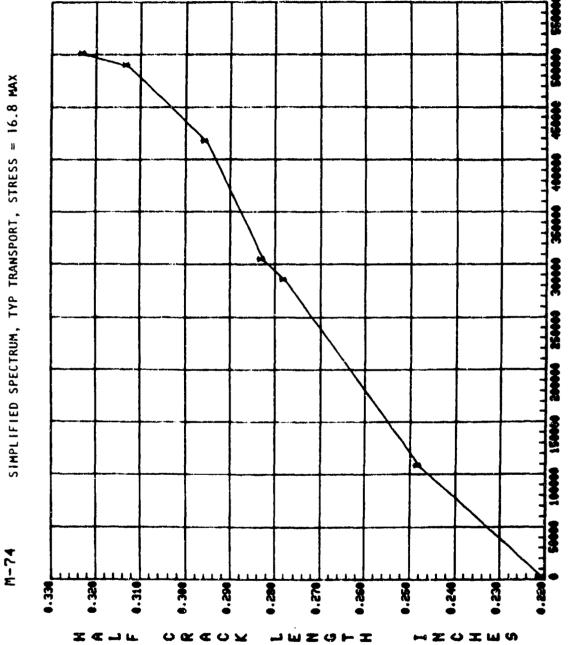
Figure 93. Crack growth curve for test M-72B.

TABLE 93. IMIA TABULATION FOR TEST M-74

SINPLIFIED SPECTRUM. TYP. TRANSPORT, MAX STRESS = 16.8 KSI SPECIMEN NO.:

		0A/DW 2.821E-07 2.227E-07 1.734E-07 1.855F-07 2.052E-07 3.679E-07	
		DELTA K 22.77 24.11 25.66 25.79 26.71 27.42	
	TEST FREG = 6.00 HZ.	K-MAX 14.01 14.84 15.79 15.87 16.44 16.88	
AN * 0.0 IN.	TEST FRED	MULI. CORR. COEFF 0.999312 0.9948312 0.994854 0.986208 0.986503 0.984567	
h = 6.000 IN.		A(REGRESSION) M 0.440 0.493 0.557 0.562 0.602 0.634	
¥.	PHAX =	ENT AIR SUREDI 495 555 565 590 625 645	
N B = 0.250		CVCLES 0. 106712. 284000. 303000. 415944. 488720. 500000.	
CCT SPECIMEN	* NIM	ENVIRONMENT CONDITION: AMBII NO. CYCLES AIMEA 1 0.0.1 2 106712. 0.0.4 3 284000. 0.4 4 303000. 0.4 5 415944. 0.0.6 6 488720. 0.0.7	

PLOTRATE CRACK GROWTH DATA SIMPLIFIED SPECTRUM, TYP TRANSPORT, STRESS = 16.8 MAX



TEST LIFE N (CYCLES)
Figure 94. Crack growth curve for test M-74.

TABLE 94. DATA TABULATION FOR TEST M-77

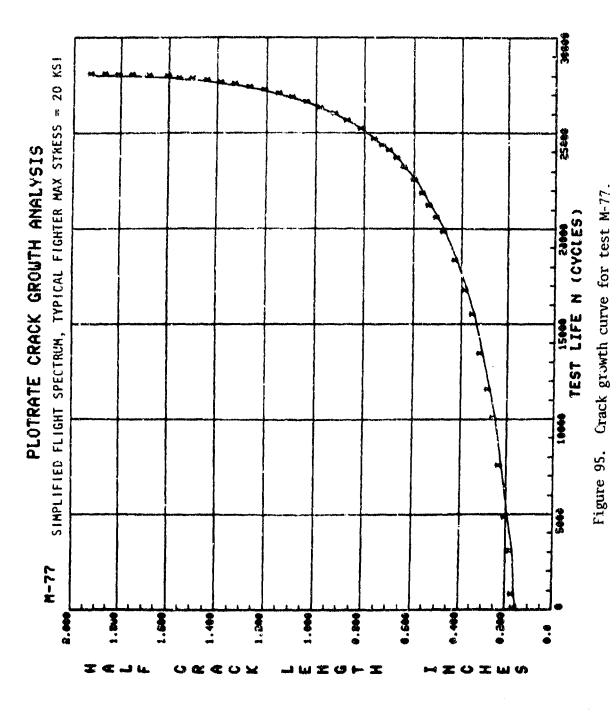
SIMPLIFIED FLIGHT SPECTRUM, TYPICAL FIGHTER, MAX STRESS = 20 KSI SPECIMEN NO.: N-77

		PMAX=		TEST FREG# 6.003HZ.	-003HZ-		
ENVI RONMENT	NT CONDITION:	ANBIENT AIR					
gg	CYCLES	A (MEASURED)	A (REGRESSION)	MULT. CURR. CSEFF	K-HAX	DELIA K	UA/DN
~	.		0.301	0.982998	13.79	15.65	2.79 E-06
~	700.		0.309	0.990741	13.96	16.06	6-4-465-46
m	2980-	0.335	0.346	1929650	14.78	17.00	8 -6 34 E -06
•	4781.	0.385	0.378	0.995916	15.45	17.77	4-806E-UC
'n	7500.		0.436	0.496776	16.60	19.09	1.4011-05
9	10000	0.495	0.503	0.997692	17.85	26.53	1.354E-05
~	11500.	•	0.543	0.998051	13.56	21.34	1.5646-05
60	13400.		439.0	0.997657	19.60	22.54	
	15450.	0.675	0.685	0.998061	20.91	24.05	2.281£-05
01	16700.	•	0.742	0.999050	21.79	25.06	2-600E-65
11	18280.		0.829	0.998 762	23.08	26.54	3-187k-65
12	19750.	•	0.931	0.998655	24.53	28.21	3.8675-65
13	20520-	0.965	0.989	0.999365	25.34	29.14	4.164E-US
7	21140.	5	1.042	+28966°0	26.06	29.97	4.659£-05
12	21790.	9	1-106	1929560	26.93	30.94	5.UBYE-ú5
16	22470.	_	1.17	0.998562	27.63	32.01	5.00 55 €
17	23100.	'n.	1.248	0.998642	28.75	33.06	6-5576-05
18	23425	~	1-320	0.996383	29.66	34.11	7.652E-05
61	24010.	-37	1.361	0.998665	30.43	34.99	8.533E-US
50	24.275.	4	1.425	0.599430	30.97	35.62	9.20oE-05
21	24615.	4.	1.493	0.999672	31.61	36.58	1.0366-04
22	25145.	9	1.607	0.999010	33.21	34.20	1.2225-04
	25575.	•	1.716	144664.0	34.54	39.72	104221-34
24	25950		1.628	0.999294	35.90	41.29	1.6691-44
25	26255.	1.935	1.932	0.999243	37.18	42.76	
5 6	26575.	Ö	2.060	1.999547	30.75	44.23	2-2791-64
27	26810.	2.170	2.172	0.999534	40-15	46.17	2.612t-04
-00							

TABLE 94. DATA TABULATION FOR TEST M-77 (CONCL)

KS
20
H
I, MAX STRESS = 20 KSI
#AX
TYPICAL FIGHTER, MAX STR
TYPICAL
I SPECTRUM.
FLIGHT
SIMPLIFIED FLIGHT SPECTRUM,
22-W
EN NO.:
SPEC INF

			!	DAZDK	3-531E-04	4-1956-04	4.9516-04	5.888E-04	7.030E-04	8 - 832E-04	1-1035-03	1 -4 00E-03	1.8895-03	2.6295-03	3.0398-03	3.9/14-03	4-711E-03
	:			DELTA A	14.64	51.39	53.16	55.00	51.02	58.84	60.35	62.76	65.76	69.20	₹0.60	74.31	76.82
:SS = 20 KSI		00н2.		K-MCX	43.02	69. 44	46.23	47.83	95.54	51.17	52.91	54.57	57.18	60.18	61.56	54.62	66.30
IFIED FLIGHT SPECTRUM, TYPICAL FIGHTER, MAX STRESS = 20 KSI	AN= 0.0 IN.	TEST FREQ. 6.00HZ.		MJLT. CORR. COEFF	0.998922	0.999256	006665-0	691666-0	0.998622	0.996445	0.997415	0.993409	E49*4.0	6.994254	0.94765	0.995495	0.991942
JOHT SPECTRUM, 1	H= 6.000 IN.			A (REGRESSION)	2.396	2.523	2.636	2.751	2.812	2.978	3.050	3.193	3.346	3.509	3.560	3.726	3.827
SIMPLIFICO FI	b= 6.250 EN.	PMAX=	AMBIENT AIR	A (MEASURID)	2.395	2.515	2-634	2.750	2.865	2.975	3.065	3.180	3.340	5-475	9.590	3.716	3.630
22-W			CONDITION:	CYCLES													
SPECINEN NU.:	CCT SPECIMEN	PHIN:	ENVIKONKENT	NO.	6 .3	30	31	32	33	34	 	36	37	Ä	36	04	1,



DATA TABULATION FOR TEST M-77A TABLE 95.

SIMPLIFIED SPECTRUM, TYP FIGHTER STRESS = 14 KS! NAX M-77A SPECIMEN NO.:

		NS/SN	1.005t-0t	2-251c-úc	3-24-6-06	4 -4 20 E-VU	5-1 196-16	5.4 131-66	5.y89t-66	8-259E-46	9.5C%E-66	1.165E-US	1 - 266t - up	1-4275-05	1.488 F-05	1.6156-05	1.TE8E-05		2.003E-05	2-169E-05	4.4 73E-05	2.407t-US	2.755t-65	3.0894-05	3-617E-05	3.464-05	4.4.34.6-4.	4 an 76.6-35	5-4234-43	6 - 1 60E-05
		DELTA K	40.6	10.21	11.20	12.05	12.66	13,31	14.00	14.60	15.63	16.60	17.22	16.05	14.36	16.63	19.25	19.62	50°07	20.35	20.84	21.26	22.13	22.87	23.79	74.56	25.44	26-23	27.26	28.24
6.00н2.		K-MAX	6.36	7.14	7.54	8.44	\$ 8 5	9.32	9.60	10.36	16.55	11.62	12.05	12.63	12.55	13.16	13.47	13.74	14,003	14.26	14.59	14.90	15.49	16.91	16.65	17.19	17.81	15.36	19.09	19.71
AN= 0.0 IN. TEST PREC= 6.		MULT. CURR. CUEFF	195655-0	0.999648	0.999559	£19966°9	550656-0	0.999556	162545-0	497666-0	0.999395	~E44440	0.597880	0.999740	5494440	\$1 5 656*0	0.999532	180886.0	1.1.2646*0	0.999310	9.99%008	9446650	# 15666°O	0.595911	0.996757	8906650	0.999362	0.549256	0.999221	0-998247
** 0.000 1%*		A LREGRESSION)	0.295	0.371	0.440	č.516	0.568	0.626	6-591	0.76%	J. 856	0.957	1.025	1-119	1.154	1.209	1.256	1.362	1.352	1.395	1.449	1.502	1.666	1.657	1.810	1.504	2.012	2.108	2,232	2.346
PHAX=	AMBIENT AIR	- 10	∾	m	0.450	w.	0.565		vo '		•		9	7	7	7	2		•		\$	Υ.	•	1.7ù6	9	5	٩.	٦,	2.72	C.
5	CUMDITION:	CYCLES	0	21500.	34400	43206	**************************************	54 700.	20365	65300	70300	75200.	76000.	81500.	62710.	84575	29092	87261.	\$4400°	64043	90823	\$50076 	****	9560a.	97355.	98626.	95936.	100781.	102190.	103219.
CCI STELLINEN PAIN=	ENVIKONMENT	NO.	~	~ :	m	~ (ω	•	 ,	23 (6 ;	01		77	5	<u>.</u>	<u>.</u>	9 (<u> </u>	9 (61	2.5	17	77	2	52	:	56	21	2£

TABLE 95. DATA TABULATION FOR TEST M-77A (CONCL)

CCT. SPECIMEN		B= 0.250 IN.	WE 6.000 IN.	AN= 0.0 1N.			
-NIW-		PMAX=		TEST FKFQ= 6.00HZ.	. оон2.		
ENVIRONMENT CEMBITION:	CEMEIT ION:	AMBIENT AIR					
NO.	CYCLES	A (MEASURED)	ACREGRESSIONS	MULT. CORR. COEFF	K-MAX	DELTA K	MC(744)
53	104111.	2-455	2-455	0.995317	23.44	29.13	7-13805
30	104812.	2.550	2,559	0.999348	21.00	30.12	20-35E4-7
31	105417.	2.660	2.655	0.997240	59.17	30.43	9-4045-05
32	109015.	2.775	2.771	0.997731	22.45	37.68	1.1106-64
33	106450.	2.650	2.870	60.864.0	23.13	33.64	1 - 2 5 7 E - C 4
35	166924.	3.005	2.994	0.998523	23.99	34.21	1.4325-04
35	107297。	3.110	3.167	0.996165	24.32	35.45	1.0242-04
36	107592.	3.205	3,210	0.995241	25.60	36.51	1.7975-64
37	107898.	3.310	3.317	* 58.564.0	46.45	37.79	4-043r-04
38	106101.	3.405	3-400	651666-0	27.14	38.77	2.34bt-44
39	108361.	3.520	3.527	0.999328	28.24	40.34	2.701F-14
04	168521.	3.615	3.616	0.996365	29.07	41-57	4.728
41	106693.	3-730	3.730	6-959254	71.0F	43.10	7.7657
**	108867.	3.860	3.671	1.849660	31.64	45.26	サール・ノン・マー
43	106950.	3.955	3,944	6.998973	32.52	46.45	5.7.20t Like
*	109050.	4.050	4.059	690666-0	33.62	48.37	40-4450-9
45	109150	701 7	7 166				

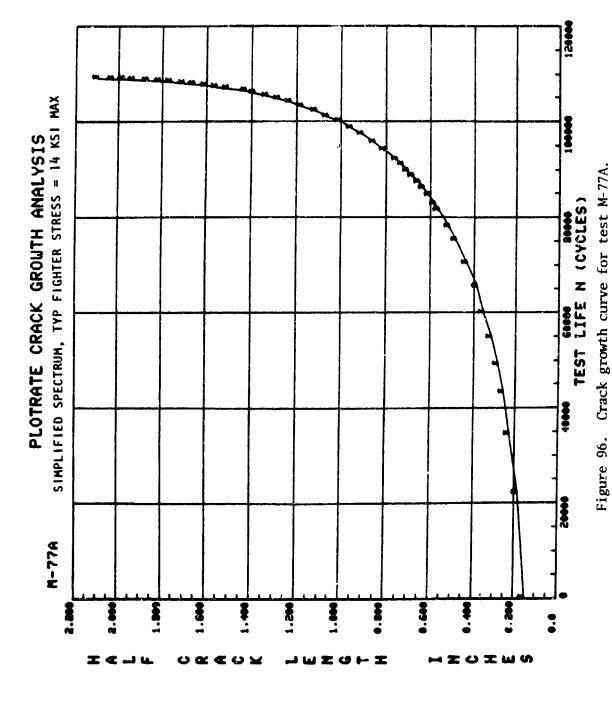


TABLE 96. DATA TABULATION FOR TEST M-78

SPECIMEN NO.: M-74 TYPICAL FIGHTER, MAX STRESS = 18 KS!

			DA/DM	4.500E-06	4-393E-06	5-203E-66	6.410E-06	7.298E-06	9-2358-06	1.161E-05	1-3415-05	1.3545-05	1-4706-05	1.616E-05	1.7956-05	2.1126-05	2-260E-05	2.520E-05	2.8396-05	3.182E-05	3-6475-05	3.9835-05	4.506E-05	4-842E-05	>-501t-0>	6.041E-05	7.0925-05	0-246E-05	9-2765-05	1 DATE OF	1.1916-04
			DELTA K	16.36	17.47	16.65	19.97	20.62	22.17	23.39	24.31	24-66	25.36	26.32	27.68	26.97	29.72	30-90	31.95	32.85	33.91	34.56	35.40	36.00	37-22	38.08	39.86	41.40	42.73	44.36	45.76
	6.00нг.		K-MAX	12.21	13.10	13.98	14.98	15.62	16.63	17.54	18.23	18-64	19 sú4	19.74	50.76	21.73	22.29	23.18	23.96	24.64	25.44	76.57	26.55	27.00	27.92	28.56	29.91	31.11	32.05	33.26	34.32
ANE D.O IN.	TEST FREG= 6,		MULT. CORR. COEFF	1.000000	0.9964-8	105166-0	0.997154	0.998723	0.996416	\$65.00 O	0.996776	0.995495	0.99593	0.595495	0.997915	0.998403	0.998415	0.996299	691866-0	0.998789	0.998126	0.999627	0.999355	0.999500	0.999760	0.999673	0625660	0.999348	0.999473	0.999640	151666.0
W= 6.000 IN.			AIREGRESSION)	0.295	0.336	0.362	0.436	0-436	6.538	0.558	0-644	0.673	0.701	0.751	0.826	0.903	176-0	1.020	1.064	1-142	1.216	1.252	1.309	1.347	1.429	1.467	1.609	1.718	1.804	1.916	2.010
fr G.256 IN.	FMAX=	AMBIENT AIR	A (MEASURID)	0.245	0.340	0.355	924.0	344-0	0.525	0.55	0.635	0.675	0.710	٠			•	•	•	•	•		•	•	1.475	1.450	1.610	1.715	1.805	1.910	2.010
		CCND1710N:	CYCLES		5000	10000.	1500C.	16003.	22000.	.2006.	27000.	2000.	. 5000	30 7 03.	33000.	35000.	36000.	37500.	38800.	39806.	40800	41397.	42055	42491.	43292.	42603.	*4752	45483.	45993	46578.	.00014
CCT SPECIMEN	PASA	ENVIRONMENT	WO.	-	?	α s	4	v	4	~		•	2	=	C3 ##	13	14	-1	92	7.7	16	61	20	21	22	ć3	24	25	98	23	8 2

TABLE 96. DATA TABULATION FOR TEST M-78 (CONCL)

SPECIMEN NC.: M-76 TYPICAL FIGHTER, MAX STRESS = 18 KSI

CC1 SPECIMEN	N.	5C 1N.	ME 6.000 3N.	AN= 0.0 IN.			
PMIN		FMAX=		1EST FREQ≠ 6.00HZ.	.00HZ.		
ENVIRONMENT CUNDITION:	CUNDITION:	AMBIENT AIR					
NG.	CYCLES	A (MEASUR ED)	A (REGRESSION)	MULT. CORR. CUEFF	K-MAX	DELTA K	70
62	47363.	2.165	2.104	0.999406	35.37	47.16	1.348
36	47737.	2.205	2,203	0.999383	36.49	49.44	1.502
31	46047.	2.290	2.297	0.999227	37.57	50.03	1484
3,5	46329.	2.400	2.394	0.998925	38.69	51.54	1.921
33	48637.	2.510	2.517	0.998546	40-14	53.53	2-329
34	46852.	2.615	2.621	0.996631	41.41	55.21	2.649
uh Mi	. 20064	2.700	2.701	0.959811	42.41	56.54	3-615
36	49165.	2.610	2.805	1086660	43.74	58,33	404
37	49326.	2.915	2.919	0.999428	45.25	60,33	3-47
35	.9464	3.030	3.630	0.999539	46.77	62,37	6.283
39	49587.	3-125	3.138	0.997413	48.31	64.42	466-4
34	49683.	3.240	3.236	0.992852	49.16	66.35	940-9
7	4978a.	3.340	3.368	0.995192	51.83	69.11	1.155
75	49836.	3.430	3.429	0.996474	52.82	70.43	6.913
43	49885.	3.545	3.527	0.992453	54.48	72.63	1-149
4,	16846.	3.6.65	3.669	0.991497	57.40	76.53	1.515
45	4997E.	3.755	3.774	0.554380	59.05	78.73	1.819
9	50017.	3.935	3.935	0.999613	62.39	63.19	2.576

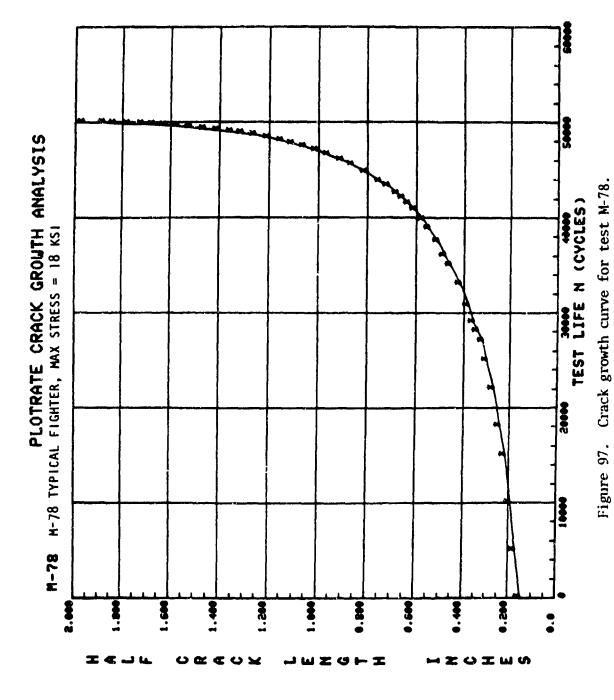


TABLE 97. INTA TABULATION FOR TEST M-79

DELTA K 22.33 22.63 23.52 24.05 24.05 24.91 25.47 26.15 6.00 HZ. 13.74 14.05 14.47 14.80 15.04 15.33 15.68 SPECTRUM. TYP. TRANSPORT, MAX STRESS = 12 KS! TEST FRED . MULT. CORR. COEFF 0.983832 0.979546 0.979795 0.982489 0.997278 0.997231 AN = 0.0 AIREGRESS!DNJ 0.817 0.852 0.901 0.940 1.004 1.004 h = 6.000 Ih. AMBIENT AIR ALMEA SURED! SIMPLIFIED 0.815 0.870 0.905 0.935 0.935 1.005 1.040 0.250 IN. PMAX = CONDITIONS Ħ 361447. 431746. 500000. M-79 • 291000. CYCLES 42000. 128567. 213000. SPECIMEN NO.: SPECIMEN **ENVIRONNENT** - NINd 23

5.350E-07 3.656E-07

2.716E-07 2.385E-07 2.495E-07

2.897F-07 3.488E-07 4.542E-07

SIMPLIFIED SPECTRUM, TYP TRANSPORT, MAX STRESS = 12 KSI PLOTRATE CRACK GROWTH DATA M-79

TEST LIFE N (CYCLES)
Figure 98. Crack growth curve for test M-79.

DATA TABULATION FOR TEST M-80 TABLE 98.

3.4645-08 1.970F-07 1.896E-07 2.013F-07 1.839F-07 1.752E-07 2.039F-01 2.663F-07 2.9926-07 3.800E-07 3.952F-07 DELTA K 24.30 24.96 26.08 26.83 27.66 27.86 28.52 28.76 29.18 24.63 6.00 HZ. 14.95 15.36 15.60 16.51 16.71 17.02 17.14 17.55 17.70 K-MAX SPECTRUM. TYP. TRANSPORT. MAX STRESS = 16.8 KS! . TEST FRED ž MULT. CORR. COEFF 0.992579 0.987650 0.995796 0.991012 0.996806 0.994376 0.991942 0.986881 0.986788 0.990907 AN = 0.0 - 6.000 IN. AIREGRESSION) 0.514 0.527 0.543 0.575 0.622 0.500 0.653 0.684 0.695 0.668 AMBIENT AIR SIMPL IF 1ED ALMEA SURE DI 0.510 0.520 0.550 0.575 0.605 0.640 0.655 0.680 0.700 0.500 6 = 0.250 IN. PMAX = ENVIRONMENT CONDIFION: 342000. 395000. 416000. 662000. 476000. M-80 112000. CYCL ES **.0000** 71000. 294000. SPECIMEN NO.: CCT SPECIMEN Fig. だまりなりょうちょう

4.500E-07

SIMPLIFIED SPECTRUM, TYP TRANSPORT, MAX STRESS = 16.8 KSI PLOTRATE CRACK GROUTH DATA M-80 23. 6.338

Figure 99. Crack growth curve for test M-80.

TABLE 99. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, AIR-TO-AIR MISSION, A TYPICAL FIGHTER

Test M-81 σ_{lim} = 20 ksi, M-82 σ_{lim} = 30 ksi, M-83 σ_{lim} = 40 ksi

READR	1=00000 15	un en i	15							
0001	C HAŅUL) A=A P.I	4=1 500)			44.6	25.0	52.3	36.0	50.7
0005	-5.00*	10.0	10.1	54.8	20.1	45.5 81.9	8.6	29.4	17.6	52.4
4000	20.2	44.5	14.6	48.6	24.5	50.6	32.5	53.7	17.5	65.7
0004	17.5	24.5	10.5	74.9	16.8	60.6	44.0	54.9	10.2	45.1
0005	50.n	03.5	3.1	67.5		45.6	27.5	63.5	9.4	64.7
0000	14.7	\$4.0	20.4	58.4	31.2	42.9	27.9	41.0	9.4	34.5
400 /	30.1	56.2	-5.0	19.4	27.0	51.9	٧.3	31.4	19.1	46.6
0008	10.0	40.2	5.2	39.1	19.5	28.7	9.3	33.2	1.8	13.2
0004	0.4	27.6	10.9	30.5	19,1	46.5	34.0	63.7	29.9	86.8
0010	1.4	20.5	10.0	51.8	22.0	41.9	21.2	42.2	16.3	26.6
0011	22.5	42.7	12.2	40.8 45.3	-5.0	48.8	14.7	48.6	23.6	57.2
0015	-3.6	27.3	11.9		27,1	41.5	29.7	81.1	29.3	60.7
0011	30.4	58.3	32.7	40./ 74.9	19.2	48.5	22.4	38.3	5.1	52.0
0014	19.8	43.5	28.5		3.0	34.6	19.8	48.7	33.4	54.2
0015	34.0	45.0	14.7	46.4 36.0	16.5	63.7	17.7	50.1	11.7	29.3
01010	25.4	18.7	18.3		9.7	36.1	-5.0	61.7	14.3	50.9
0017	-7.5	41.4	15.3	33.8 52.1	24.9	65.2	-10.3	50.7	12.4	44.6
0018	30.1	47.9	25.4		19.0	46.2	23.4	42.3	3.5	42.9
6019	36.1	47.0	24.3	36.4	19.1	47.2	6.4	74.1	12.2	50.2
0020	35.8	64.4	16.9	34.6	15.3	39.2	20.2	46.4	36.3	58.4
1500	59.4	45.6	12.7	46.2	29.5	41.3	11.5	46.4	-5.0	47.4
0055	5.6	60.0	11.9	44.6 50.2	19.3	55.1	-4.6	83.3	0.6	57.5
0021	n. 9	44.3	32.4	34.8	22.2	65.7	24.8	47.5	13.4	55.9
0024	24.1	57./	16.2	34.5	-55.0	61.8	36.2	66.4	39.4	•0.9
0062	42.5	64.5	24.4	51.2	34.5	54.9	26.8	39.5	-3.7	81.0
0056	35.4	50.0	25,5	59.6	8.3	53.9	7.7	45.3	29.7	66.4
9927	-1.8	47.0	15.5	33.5	15.0	36.1	2.7	58.5	2.8	40.9
○○○○	-5.0	49.2	5.5 13.2	51.7	4.0	33.3	9.4	29.3	11.4	44.5
9656	13.0	58.1	30.9	45.9	13.5	46.1	21.1	57.3	13.9	35.2
0050	19.0	45.4	19.3	40.6	1.1	25.6	4.3	67.1	32.4	71.0
0051	18.7	57.3	12.5	42.8	11.3	41.4	22.8	47.5	17.9	40.1
0025	41.5	51.4	-5.0	41.4	12.2	74.3	15.1	50.4	20.7	45.4
0011	17.5	55.1 59.1	28.3	45.5	29.1	52.9	12.0	45.1	30.9	48.0
0054	54.3	66.8	47.6	61.6	15.0	31.1	14.3	50.6	7.7	53.2
0035	4.7 34./	00.0	6.8	20.5	6.2	56.5	9.3	75.7	12.6	52.7
0030		55.7	17.4	57.7	22.3	61.7	29.0	51.7	39.0	55.5
0037	\$1.5	42.6	8,1	25.8	-5.0	60.0	13.5	56.0	14.0	63.7
0038	12.2	32.0	20.3	43.4	9.7	48.1	33.5	45.2	-7.3	47.1
0034	21.6	17.4	45.9	58.8	10.3	71.0	10.6	20.5	23.3	44.2
0040	-4.8	40.3	4.9	41.1	17.9	42.7	5.1	41.4	27.2	58.7
0041 11142	24.8	42.4	13.3	46.0	1.2	26.5	-4.5	51.3	5.4	26.6 34.4
0047	15.4	50.5	6.6	39.0	5.5	60.3	-5.0	42.2	13.0	41.0
0044	15.6	55.0	12.7	40.6	23.6	49.4	36.7	53.9	25.7	•4.3
0045	18.2	11.3	22.5	46.5	3.0	44.7	6.4	39.8	55.5	44.1
0045	24.5	57.0	20.3	53.4	9.8	33.3	0.9	46.4	0.3	64.1
0047	24.5	47.4	22.3	47.6	•.3	77.4	25.9	74.7	18.7	59.3
0048	22.7	58.6	4.7	72.1	7.6	72.3	17.5	53.0	25.4	66.3
0044	15.0	42.4	27.8	41.0	17.3	70.0	12.9	47.5	11.6	71.4
0050	50.3	89.4	-0.2	69.5	47.1	60.2	13.1	66.1	23.5	49.3
0051	14.7	53.3	10.2	35.5	10.7	42.3	5.4	61.4	28.9	47.3
0025	19.1	51.0	1.5	45.7	15.9	32.5	20.9	43,4	38.5	54.9
0053	22.5	46.1	21.8	52.4	36.4	61.3	6.7	57.5	42.8	75.9
U054	-5.0	39.9	28.4	50.2	8.4	\$1.0	13.6	55.9	-6.0	50.4
0055	10.6	50.3	34.6	46.2	11.4	66,4	11.7	55.5	6.7	26.4
0050	37.6	51.0	22.5	37.5	14.6	24.7	1.2	33.1	9.6	49.7
y057	1.5	42.0	0.5	41.0	11.2	47.8	19.5	37.6	23.3	45.3
0053	+0.4	40.1	29.0	44.2	23.4	•0.	14.2	40.4	29.9	56,5
0059	24.3	56.8	-5.0	67.6	22.4	60.6	32.9	52.2	-717	,

 $^{^{\}star}$ % of $\sigma_{
m lim}$

TABLE 99. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, AIR-TO-AIR MISSION, A TYPICAL FIGHTER (CONT)

Test M-81 σ_{lim} = 20 ksi, M-82 σ_{lim} = 30 ksi, M-83 σ_{lim} = 40 ksi

0940	24.3	58.5	25.0	55.4	36.0	60.4	23.6	68.7	24.0	61.6
9061	10.0	45.5	21.5	49.1	6.8	50.4	1.0	54.5	17.4	29.3
0002	8.6	42.3	31.6	49.6	34.8	46.4	25.7	46.8	16.8	41.3
0003	-0.7	61.2	8.6	42.7	5.1	44.7	16.0	59.0	-0.7	64.7
0064	21.5	55.4	17.5	34.6	-5.0	30.9	7.5	55.0	29.6	51.4
0065	2.2	72.7	1.3	35.2	-3.8	70.1	4.6	73.8	21.9	49.4
0005	36.6	54.0	41.3	56.3	27.5	38.1	25.3	49.5	9.6	60.9
0007	13.9	53.4	14.9	36.7	15.9	41.8	15.3	38,3	19.8	50.7
8000	24.7	46.8	19.0	55.2	8,9	44.2	5.9	49.6	19.9	55.6
0064	-0.1	21.5	-4.9	27.4	12.2	51.4	-5.0	59.9	16.6	78.6
0070	-2.5	40.2	3.7	80.4	7.5	62.3	31.2	60.0	37.3	54.7
					13 4	36.6		30.0		
0071	\$#°§	42.5	30.5	57.2	13.4		9.6	29.9	12.5	25.8
2700	-0.7	55.7	-4.2	37.7	16.1	56.9	36.3	56.8	27.5	41.8
0075	-0.6	47.4	53.3	65.3	10.0	\$0.8	30.6	50.0	15.0	37.6
0074	20.2	37,0	21.7	53.2	37.1	45.4	18.7	\$7.7	-5.0	37.8
0075	24.6	42.7	1.6	40.1	13.4	95.1	4.4	52.7	5.6	66.3
0076	6.2	34.7	-0.9	38.9	24.2	59.2	2.4	47.6	15.3	36.2
0077	9.1	52.4	2.4	16.6	-5.1	54.3	35.8	53.2	1.7	52.1
0078	35.6	70.2	26.5	40.0	25.2	49.2	20.9	35.2	17.6	37,4
0079	26.4	55.7	20.7	54.3	8.1	45.5	34.6	46.7	23.9	88.7
0040	-5.0	82.4	21.1	54.4	30.2	60. 1	5,8	35.7	14.5	60.4
0061	23.2	46.4	19.9	44.7	5.5	40.3	42.8	54.4	24.5	48.8
0095	23.6	42.7	5.8	43.6	26.00	74.2	12.6	34.2	23.3	37.5
2005	24.9	16.9	20.5	55.5	22.5	46.8	52.5	65.0	23.9	56.2
0064	12.7	.1.0	27.4	53.4	13.3	37.9	20.5	33.2	22.3	40.3
0005	25.7	42.8	-5.0	53.4	21.5	67.9	24.8	46.5	6.9	31.1
0006	18.1	41.4	14.6	27.1	10.4	61.2	8.5	53.4	3.1	27.7
9007	15.0	44.5	14.9	66.4	35.0	59.1	30.2	71.3	24.0	76.1
0080	28,3	52.1	14.8	69.1	40.5	73.0	8.4	56.3	22.4	37.6
0089	17.2	60.1	6.2	30.5	10.9	57.2	10.1	42.2	21.2	67.9
0090	5.3	63.4	34.3	47.4	-5.0	52.9	21.4	57.5	17.5	30.7
6041	10.0	56.2	26.1	45.5	27.9	60.4	25.5	41.0	19.7	56.5
0045	24.4	37.0	24.6	47.5	17.2	92.5	5.3	44.1	5.4	20.5
0093	-0.3	37.7	26.0	39.8	3.3	23.9	3.2	42.6	-1.9	57.6
0074	42.5	9.50	19.4	14.2	13.4	46.8	23.2	52.5	26.4	37.2
0095	7,1	35.9	22.0	64.2	32.4	54.8	-5.0	54.0	14.5	53.6
0073					28.6					
	12.8	38.9	21.4	53.7	10.1	49.5	39.5	60.8	26.1	52.9 47.8
0047	6.7	61.4	21.5	43.1	19.7	31.6	4.8	24.1	11.9	
0098	14.6	34.3	10,4	15.0	10.2	21.6	9.0	41.6	12.7	51.6
0049	10.1	36.5	14.7	54.3	35.0	73.8	34.4	71.1	30.3	52.0
0100	20.9	58.5	20,7	48.7	24.9	44.6	28.0	48.0	-5.0	62.3
0101	45.4	74.7	33.8	46.3	21.4	53,4	8.9	45.9	-3.5	48.8
0102	15.6	58.4	32,2	48.8	9.6	48.7	15.3	26.4	3.0	57.5
0105	15.4	51.7	15.3	41.5	7.9	27.7	14.7	71.6	6.4	24.7
0104	3.0	54.2	-0.4	46.7	11.5	34.2	-2.9	32.1	-0.3	47.4
0:05	3.1	31.1	9.6	55.2	5.7	50.7	27.8	38.6	4.6	63.1
3100	-5.0	44.0	31.0	61.7	43.5	65.7	6.3	47.8	53.1	71.9
0107	10.0	16.6	22.7	16.0	5,2	31.1	17.5	70.8	35.3	61.6
0108	20.6	56.5	7.2	54.9	17.4	30.1	9.2	19.9	5.9	17.9
0109	4.5	45.2	41.4	76.0	5.9	55.4	13.6	63,4	37.4	59.9
0110	33.4	45.6	8,65	50.1	21.7	54.7	12.2	46.3	32.0	44.1
0111	4.4	70.8	~5.0	48.4	23.4	45.7	20.3	52.5	•.≥	35,3
0112	20.5	01.4	8.1 30.3	47.5	26.7	41.5	16.5	34.2	4.3	84.1 43.2
0115	25.8	47.9	30.3	59.6	20.5	64.6	34.3	\$5.0	27.8	43.2
0114	20.0	62.8	17.1	40.1	17.0	30.6	12.6	65.8	9.5	59.0
0115	34.4	67.0	-4.2	60.6	0.9	63.5	12.6	37.9	7.7	69.5
011-	10.7	42.4	25.9	42.3	-5.0	54.1	24.7	66.4	23.2	49.9
0117	12.4	34.5	23.5	50.5	25.5	44.1	22.4	45.7	26.1	74.2
011#	39.4	01.1	24.2	45.7	10.3	53.7	20,6	54.1	1.56	67.6
0117	23.4	62.5	24.4	80.2	19.1	48.7	29,4	55.4	19.7	79.2
0150	11.2	43.8	21.7	48.2	20.9	71.9	33.9	63.3	34.9	52.7
1510	24.5	60.6	10.7	05.8	17.5	64.4	-5.0	41.7	11.5	14.0
0122	-55.0	20.5	11.0	30.7	19.0	40.1	29.5	47.3	2.1	60.1
1210	26.0	59.4		64.4	21.4	52.4	34.7	45.6	27.3	51.4
4163	CD. "	37.0	58.5	04,7	61.7	36.0	37, /	-3,0	61.3	77.4

TABLE 99. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, AIR-TO-AIR MISSION, A TYPICAL FIGHTER (CONT)

Test M-81 σ_{lim} = 20 ksi, M-82 σ_{lim} = 30 ksi, M-83 σ_{lim} = 40 ksi

0124	30.2	57.5	23.5	62.5	5.2	46.9	11.1	35.≥	16.7	35.3
0135	7.1	45.4	15.4	46.9	22.0	50.0	24.0	30.6	13.8	52.0
0126	4.1	17.7	-4.2	36.9	6.0	36.1	5.3	59.4	-5.0	67.1
0127	14.0	48.0	19.8	78.5	81.8	45.9	21.9	45.8	9.5	67.8
0128	17.0	37.6	18.5	85.2	24.5	35.3	20.3	56.2	31.6	5,50
0129	8.7	50.2	10.5	85.9	20.0	42.2	5.2	34,2	11.9	52.6
0130	21.4	64.7	-0.1	10.4	-3.7	62.5	6.6	44.1	9.8	41.6
0131	24.3	34.6	19.4	31.1	15.6	32.6	-0.2	46.3	15.5	45.0
0132	-5.0	41.0	16.2	45.2	34.1	58.6	26.5	48.3	10.5	43.0
0133	-7.0	61.6	5.4		20.9	44,4		57.4		59,9
	9.8			53.0			1.5		26.3	49.5
0134	18.3	56.5	-2.9	49.3	36.9	68.0	49.3	74.5	34.2	44.8
0135	21.6	54.1	12.5	52.3	12.8	46.1	29.1	71.4	34.0	69.0
0136	30.4	42.4	14.7	14.9	6.6	27.4	11.9	77.7	27.1	53.9
0137	10.3	70.1	-5.0	67.1	43.0	63.1	7.7	27.8	8,7	46.0
0138	0.0	54.7	25.8	53.5	95.6	48.9	33.4	47.8	35.2	74.6
0139	43.2	55.3	21.5	69.1	21.7	83.9	10.9	43.6	18.9	34,3
0140	7.6	45,9	32.7	54.3	9.1	50.3	2.6	35.7	16.2	43.8
0141	29.4	52.5	13.8	58.6	16.2	63.3	29.5	49.1	9.2	30.5
0142	10.4	57.4	-0.1	45.3	-5.0	65.0	35.1	53.7	27.4	45.1
0143	35.1	65.3	15.4	31.0	5.3	22.3	7.8	45.0	-3.7	25.6
0144	2.1	68.4	7.4	63.3	10.5	22.3	2.8	58.8	13.3	45.4
0145	8.0	56.9	7.5	30.5	-1.1	41.8	12.6	61.7	3,3	36.2
0146	25.1	51.8	20.6	58.3	42.7	63.7	25.9	49.2	11.7	40,3
0147	28.4	54.7	23.2	46.2	14.7	46.7	-5.0	18.7	-10.0	44.4
0148	-5.8	39.7	-2.7	64.8	1.0	41.2	8.65	49.8	20.4	39.5
0149	9.1	40.2	4.5	51.5	8.05	54.8	22.4	54.8	2,3	25.2
0150	5.6	24.8	13.5	38.4	28.2	43,7	12.3	29.3	12.3	43,5
0151	30.4	45.0	22.7	75.1	30.0	49.9	23.6	43.8	2.1	70.7
0152	3.5	36.2	10.4	48.9	25.1	41.5	28.6	44.1	-5.0	66.4
0153	21.8	44.5	20.1	56.1	6.9	44.9	20.3	65.4	44.0	71.0
0154	11.6	51.9	6,3	50.1	22.0	41.6	24.6	53.5	14.2	63.4
0155	11.1	41.1	13.7	32.6	11.4	15.0	2.5	64.5	10.0	43.3
0156	26.8	57.7	-4.2	73.5	12.7	41.9	18.6			43.3
0157	14.6		30.7					46.0	24.6	36.9
0158		41.7		67.5	28.5	71.2	15.4	49.9	21.4	59.2
	~5.0	47.4	22.9	66.1	15.4	47.0	31.7	43.6	20.8	34.2
0159	8.5	20.4	0.0	42.3	-14.3	48.6	21.2	43.3	7.2	80.1
0160	27.6	55.3	38.2	66.5	5.1	43.4	9.2	62.8	\$5.0	51.9
0161	0.4	43.6	19.7	56.8	6.7	8.05	3.0	45.7	13.3	30.2
0105	15.9	41.4	9.1	47.9	18.6	29.4	12.8	66.6	7.5	45.6
0165	29.6	61.3	-5.0	46.3	19.5	35.3	11.4	55.4	2,4	55.3
0164	7.2	48.1	33.8	50.1	23.3	49.8	19.3	42.2	25.2	57.0
0165	43.0	58.5	15.9	52.5	29.0	50.1	23.5	40.2	23.0	70.6
0166	27.9	52.1	14.5	44.8	16.6	44.7	26.1	44.9	10.2	43.4
0167	21.1	41.8	2.0	62.5	9.6	36.1	3.5	60.9	21.4	46.7
0168	33.7	47.5	14.4	54.5	-5.0	60.9	16.4	32.1	17.3	60.2
0164	0.5	26.9	9.9	55.7	13.5	45.1	41.8	53.3	20.7	39.4
0170	24.2	40.6	t. 6	63.2	23.0	45.3	22.3	36.1	21.0	65.7
0171	27.6	40.2	22.5	43.0	31.8	77.5	-0.2	74.3	24.8	53.4
0172	28.1	45.1	31.2	47.5	21.2	35.4	4.1	25.5	14.0	36.3
0173	10.3	50.6	7.7	31.4	7.3	47.4	-5.0	15.1	8.1	36.7
0174	7.4	49.4	10.9	45.9	10.4	22.4	10.6	23.1	6.4	20.4
0175	6.4	50.6	1.5	34.4	-6.0	56.3	3,1	43,3	26.1	30.2
01/6	21.9	42.9	27.1	40.3	11.2	34,4	21.0	69.4	14.2	79,2
0177	-10.1	67.3	11.1	44.8	8.9	51.4	10.2	6.52	15.4	61,3
0178	30.6	48.6	15.3	56.3	15.2	49.6	22.6	48.5	-5.0	51,5
0179	11.8	59.0	14.9	43.0	31.9	43.1	24,1	39.9	6,1	53.9
0180	5.4	55.0	21.7	49.9	16.2	40.0	6.7	47.9	27.4	43,6
0181	11.1	46.1	34.6	77.4	-6.6	64.6				77.7
		70.1	, , , ,	77.7		44.0	4.6	70,9	19.1	40,6

TABLE 99. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, AIR-TO-AIR MISSION, A TYPICAL FIGHTER (CONT)

Test M-81 σ_{lim}	=	20	ksi,	M-82	σ_{lim}	=	30	ksi,	M-83	σ_{lim}	#	40	ksi	
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0162	32.6	05.4	8.5	64.2	12.6	54.4	10.5	34.1	3.0	37.7
4164	27.3	38.1	24.3	50.5	24.5	45.4	4.1	42.8	19.6	57.9
0144	-5.0	50.8	37.0	41.6	3.3	57.6	20.1	44.6	36.7	51.1
0185	Ů.Ú	49.8	32.6	64.5	11.3	50.7	10.6	23.4	11.1	56.2
0146	30.8	54.4	14.5	27.6	7.9	30.8	20,4	45.0	14.5	54.4
0187	18.2	34.0	8.0	56.3	15.7	48.5	14.5	56.7	44.3	4.54
0100	13.3	49.0	22.7	42.1	16.1	38.2	8.0	49.6	7.1	24.9
0144	6.5	45.2	-5.0	67.7	15.7	37.8	9.3	57.4	19.5	61.6
0140	24.1	40.0	17.7	49.8	3.0	66.9	14.6	26.9	-0.5	35,5
0141	13.6	25.7	15.4	60.6	1.1	35.8	14.5	61.0	30.4	46.5
0192	4.8	19.9	7.2	44,2	22.7	33.6	11.6	40.9	4.8	67.1
0193	16.2	74.6	10.0	53.5	1.0	51.3	1.9	73.4	1.6	42.2
0194	30.1	61.6	13,6	34.7	-5.0	50.3	32.4	70.4	50.6	
0195	25.8	54.5	42.0	55.6	10.9	48.5	17.1	37.8	3.4 1.7	32.5 52.4
0196	4.2	41.9	16.4	46.9	11.0	46.7	20.5	52.1		23.9
0197	35,4	49.1	24.7	70.4	16.8	64.8	-1.8	44.5	9.3	
0198	12.0	48.2	22.9	37.3	10.8	31.5	16.6	40.2 49.2	20,3 5.4	48.5 25.2
0149	26.7	59.9	21.7	52.3	11.1	35.6	-5.0	39.6	-0.2	31.0
0200	12.6	47.9	25.5	41.9	3.4	57.8	28.0	45.6	6.9	33.7
9201	7.6	57.0	8.3	37.0	13.0	67.2	5.6 18.3	59.3	38.2	64.7
0202	4.4	67.4	15.9	46.6	36.1	46.6	20.9	42.1	17.3	43.1
0203	13.5	39.2	16.4	49.9	12.1	54.3 44.9	23.4	34.3	-5,0	61.3
0204	11.5	51.2	19.2	39.1 39.1	12.0 24.4	42.4	15.5	45.6	21,5	35.9
0205	9.0	48.7	8.8	47.2	20.0	52.2	17.0	53.4	35,2	53.7
0206	24.8	38.5	13.4	67.3	6.2	38.0	25.5	44.1	30,3	42.3
0207	19.0	38.5 46.6	35.0	6.80	40.8	52.6	13.5	32.7	12.0	60.7
0209 0208	25.4 32.0	49.7	33.7	46.6	27.7	49.5	38.1	55.1	-2,3	44.7
0210	-5.0	41.7	22.2	47.1	33.6	55.4	10.8	49.0	38,4	49.8
0511	٧, ٧	56,9	27.4	53.7	31,4	60.6	8.0	51.0	26.1	61.8
0515	39.7	17.7	34.8	53.2	55.0	34,4	9,2	35.0	20,2	42.3
9213	15.6	41.5	18.8	45.7	34.1	45.0	26.0	47.5	26.0	44.1
0214	34.0	33,2	26.2	37.6	13.5	39.3	23.0	48.7	7.5	33.7
0215	22.6	43.5	-5.0	44.7	16.3	64.5	7.8	55.6	8,2	30.6
0216	50.5	44.8	34,1	54.0	20.7	41.1	26.6	72.3	25.5	55,5
0217	30.0	72.5	7.3	30.1	25.1	39.0	17.6	62.8	8,2	35.2
9120	-4.4	19.3	0.8	53.2	6.3	50.2	5.7	63.9	5,0	49,7
6150	21.1	30.3	-1.0	27.3	2,3	55.9	16.5	59.5	26.0	50.6
0220	4.5	41.5	2.8	39.0	-5.0	52,2	10.0	50.9	35.2	56.7
1550	-2.4	52.7	8.3	26.1	12.4	32.0	15.1	60.6	4.6	62,7
0555	-1.8	43.9	14.7	50.2	4.54	56.7	24.2	56,9	3.3	53.8
0553	41.4	69.1	31.5	41.7	23.0	48.9	30.5	78.3	10.6	37,5
4554	23.0	55.0	31.9	48.0	9.4	35.6	15.7	35.1	35.2	51.4
0552	11.2	45.0	35.1	46.8	23.9	\$3,5	-5.0	54.2	-3.1	8.58
0550	13.1	72.2	19.6	76.3	36.8	68.3	17.9	68.6	0.7	64.9
0227	35.0	67.2	17.1	35.1	٠,٠	29.4	12,4	45.6	15.5	43,2
0559	2.7	40.8	9.7	50.0	20.4	46,0	23,2	50.5	15.4	83.0
4550	17.4	30.2	19.6	30.4	26.5	77.5	19,8	52.2	10.0	83.5
0530	6.3	79.2	16.0	29.4	4.1	48.5	31.2	50.6	-5.0	52.4
1650	4.4	40.1	10.5	24.4	13.1	39.5	23,7	53.5	7.6	74,8
0575	16.7	66.6	4.8	49.5	20.1	45.7	25.9	47.0	13.1	54.6 30.7
0533	24.4	50.0	27.4	49,7	34.2	65.5	17.2	69.9	23.4	66.4
0234	11.8	51.1	31.7	46.1	19.2	29,3	10.0	65.6 59.4	45.7	61.3
0532	56.5	74.6	38.4	56.4	28.1	54.3 67.1	31.5	61.0	28.7	47.3
0236	-5.0	57.0	36.9	71.7	34.1 21.8	47.6	14.4	43.6	-6.8	55.2
0237	33.4	66.3	30.3	43.7	9.8	63.4	-12.7	5.0	-5.2	39.6
0238	2.5	37.6	19.4	40.3	21.6	55.5	17.7	45.1	10.0	54.1
0234	12.1	30.3 53.0	12.7	53.8 18.0	21.5	50.1	33.6	66.7	17.5	35.4
0246 0241	3.8 25.0	44.8	-5.0	40.6	24.5	47.3	11.3	40,7	23.7	60.7
0242	3.4	43.4	19.9	50.6	5,7	51.0	-1.3	55.1	17.0	62,5
7475	247	4914				-,,,	• • -		• • •	. •

TABLE 99. METHODOLOGY DEVELOPMENT TEST PROCRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, AIR-TO-AIR MISSION, A TYPICAL FIGHTER (CONCL)

0243	34.2	61.0	40.6	54.5	14.1	60.9	14.2	50.4	19.4	62.5
0244	2.4	14.2	41.4	53.4	11.0	20.1	13.2	26.9	8.≥	50.0
U245	7.4	44.5	4.5	14.4	-10.2	45.7	29.5	40.3	13.6	41.3
0246	15.5	47.4	12.5	71.6	-5.0	50.0	24.0	51.6	32.4	44.0
0247	17.2	55.1	13.3	57.0	15.0	34.5	1.3	27.1	1.3	36.7
0246	7.6	41.5	30.3	47.2	26.2	41.0	4.7	61.4	16.3	35.5
0249	23.3	43.4	10.2	43.5	27.0	51.6	16.3	26.9	11.7	69.1
U25U	0.6	54.4	-2.9	50.0	-1.1	45.4	54.6	53.7	22.4	40.4
0251	23.4	55.2	44.5	64.2	21.0	70.7	-5.0	56.3	18.4	61.4
0252	26.2	41.1	20.6	58.0	37.0	44.1	13.4	45.5	-0.6	59.0
4251	7.5	64.9	17.6	53.6	34.1	63.7	14.1	51.0	-0.6	39.2
0254	15.4	61.8	16.5	00.2	24.8	52.2	26.5	57.3	9.5	21.4
のとうち	4.5	55.0	2.4	44.4	16.5	41.8	10.1	47.6	33.7	67.1
9256	4.4	55.5	32.4	47.5	11.9	74.1	25.2	59.0	-5.0	54.6
0257	18.7	52.7	12.7	26.1	17.1	41.8	8.5	44.7	30.1	49.6
0258	0.5	48.1	24.0	40,5	21.4	35.5	15.4	38.2	10.0	57.7
0254	16.6	35.8	23.9	42.0	26.4	52.8	23.8	30.5	-5.6	55.1
0260	14.5	45.4	30.1	49.8	25.4	50.1	18.4	44.6	7.6	51.0
1950	35.9	59.7	37.2	51.7	33.6	47.7	37.0	59.2	32.5	54.9

TABLE 100. DATA TARRICATION FOR TEST M-81

RANDOM SPECTRUM, TYPICAL " . ER, AIR-TO-AIR MISSION, LIMIT STRESS = 20 KSI SPECIMEN NO.: A-61

200	
	PMAX=
T AIR	AMBLENT AIR
RED) AIREGRESSID®1	A(MEASIRED) AIREGRES
0 0.321	
	370
0.424	1,20
	22.9
	515
	565
	530
	700
	0.865 0.810
0.387	370
	955
5 1.026	325

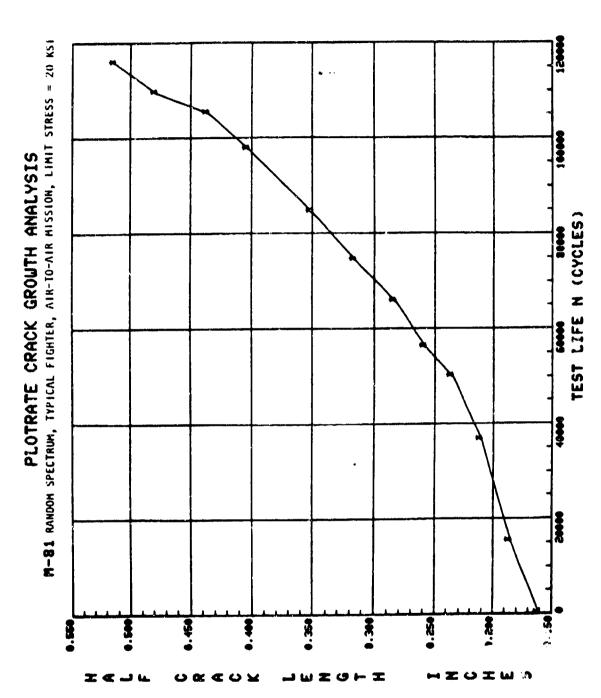


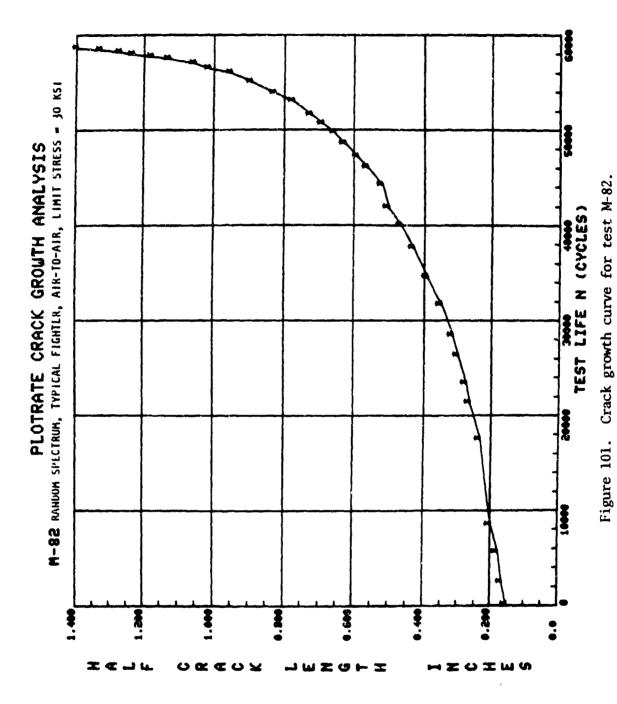
Figure 100. Crack growth curve for test M-81.

TABLE 101. DATA TABULATION FOR TEST M-82

SPECIMEN	r= 0	0.250 IN.	W= 6.00C IN.	AN= 0.0 IN.			
		PMAX=		TEST FREG= 6	6,00н2.		
ENVIRONMENT COMP	CONDITION:	AMBIENT AIR					
CYCLE	ر. ب	A (MEASIRED)	A (REGRESSION)	MULT. CONR. COEFF	K-MAX	DELTA K	0 A/0N
	.	0.360	0° 300	0.996825	12.20	15.23	4 .5 3 v E - úb
2 3	2335.	0.377	0.327	0.997643	12.73	15.69	
ž	5487.	0.355	0.356	0.991722	13.30	16.59	4.9996-00
48	8463.	0.3%	0.365	0.993429	13.83	17.26	5-0 28E-00
17421	.21.	0.465	0.477	0.994544	15.41	19-24	5-3251-06
21295	3.	0.530	0.524	6.995326	16.16	20.17	6.78-£-C6
23312	112.	0.550	0.550	0.997644	16.51	20.6e	7.5 JOE -06
26221	:21.	0.555	0.596	926%60	17.20	21.55	8.942E-00
2 6 3	127.	0.630	0.632	0.998623	11.15	22.20	9.4252-60
31542	.45.	0.65	0.760	0.999065	13,75	23.40	1.1418-05
344	.11.		177.0	0.998573	19.72	74.61	1.321E-65
37580	.03	0.855	0.862	0.994346	20.90	26.09	1.3556-65
39953	57.	0.930	0-930	0.993601	21.75	27.15	1-449E-05
41792	.26	1.600	0.982	0.990469	22.3is	27.94	1.566t-05
44209	-60	•	1.058	0.987477	23.30	79.06	1.8434-65
71095	112.	1.120	1.121	0.992475	24.05	36.01	2-166E-05
47151	51.	7	1.169	0.996462	54.59	30.69	2-453E-05
48547	.41.	?	1.249	104656*0	15.63	31.83	4.8284-65
49705	6	· ·	1.315	601566.0	26.25	32.76	3-0058-05
205	50644.	C.	1.372	0.996099	26.86	33.55	3-4:2E-05
51584	. 49	4	1.436	0.996612	57.59	34.44	3.9141-05
16625	-65	·?	1.556	0.999217	28.50	36.07	4-7555-05
53884	184-	9	1.640	0.995555	24.42	37.21	5-6%[-25
5503 £	13 6 -		1.782	0.997376	31.35	39.12	6.965E-US
55953	.53.	3	1.916	0.995253	32.61	40.24	5-5736-35
56477	:	2-020	2.008	0.994746	33.61	42.20	1.3%E-04
\$1005	3 5.	7	ž-125	0.955790	35.16	63.60	1 27304
E 7 C 3	•						

TABLE 101. DATA TABULATION FOR TEST M-82 (CONCL)

	:				1.6566-0	2.235E-04		3.390E-04	
	•			DELTA K	46.79	48.48	11.65	51.87	53.53
SS = 30 KSI		.00HZ.		K-HAX	37.49	38.84	39.68	41.56	45.89
RAMDOM SPECTRUM, TYPICAL F!GHTER, AIR-TO-AIR, LIMIT STRESS = 30 KSI	ANE 0.0 IN.	TEST FREG= 6.00HZ.		MULT. CORR. COEFF	0.998278	6.993118	0.991209	0.992267	0.55264
UM, TYPICAL F:GHTER,	W= 6.000 IN.			AIRE		2.455			
RAMDOM SPECTR	6= 0.250 IN.	PMAX=	AMBIENT AIR	A CHEASURED)	2.350	2-460	2.535	2.650	2.750
: H-62			CORDITION:	CYCLES	57715.	57998.	58194.	56444.	58585.
SPECIMEN NO.: M-62	CCI SPECIMEN	PMINE	ENVIRONMENT COMDITION:	NO.	\$	30	31	32	33



275

m make a keep of

DATA TABULATION FOR TEST M-83 TABLE 102.

SPECIMEN NO.:	M-63	RANDOM SPECTRUP	I, TYPICAL FIGHTER,	RANDOM SPECTRUM, TYPICAL FIGHTER, AIR-TO-AIR, LIMIT STRESS = 40 KSI	= 40 KS1		
CCT SPECIMEN	4	0.750 IN.	W= 6-000 IM.	AN= 0.0 1%.			
PHINE		#X/ #d		TEST FREG= 6.00HZ.	00н2.		
ENVIRONMENT CO	CONDITIONS	WE AMBLENT AIR					
•	CYCLES	A (MEASURID)	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	#0/¥0
	ċ	0.300	C-301	6.958104	16.28		1-754-45
·2	411.	0.320	0.315	0.592903	16.66	20.61	1-1011-05
m ·	2167.		0.36E	0.998205	18.01	34.22	1-4591-05
3 (4183.	0.475	0.425	0.996641	19-46	17.57	1.3476-05
.	5270-	0.470	0.453	0.997672	20.01	24.96	1.3156-05
Q (6919.	0.566	0.492	0.956646	20.bb	26.36	1-3946-65
	9366	0.556	295-0	466046-0	22.33	27.87	1.7491-05
	16265.	0.565	0.591	207636*0	25.92	₹ 9 •67	2.166f-0>
	11129.	9	0.627	11726.0	23.63	*****	4-6278-05
	11935.	•	3-674	0.997636	24.52	30.61	3.0156-65
	12075.	~	0.720	0.997556	25.37	31.67	3-4456-05
	13428.	0.775	0.774	0.998121	20.34	32.51,	3-661E-üs
	14096.	0.625	0.829	419256-0	27.30	34.08	4.475k-u5
	14 738.	0°8°0	0.884	0.9%21\$	26.24	35.25	5,5856-05
	15250.	5:6*3	0.945	0.991477	92.67	36.51	6-3761-05
9 !	15764.	0	1-012	0.992597	30.34	37.66	6.720E-65
	16202.	~	1.073	0.990368	31.31	39.08	6.3835-05
	16693	1.140	1.157	0.988207	32.62	40.11	4.4328-05
	17148.		1.249	990066-0	34.61	42.45	1.2056-04
	17446.	ď	1.317	0.967937	35.03	43.71	1.31EE-64
	1 7689.	4	1.390	0.594676	36.11	45.06	1.381E-0.
	17807.	4	1.420	0.975641	35.55	79.64	1.2834-64
	17963	*	1.459	0.9624>8	37.13	46.33	1-7416-04
	18434.		1.651	0.978116	39.91	49.61	3.7416-04
 	18569.		1.772	176.96.0	41.55	51.98	5.173E-04
	18612.	1.835	1.831	0.995449	42.51	23-65	7.7521-04

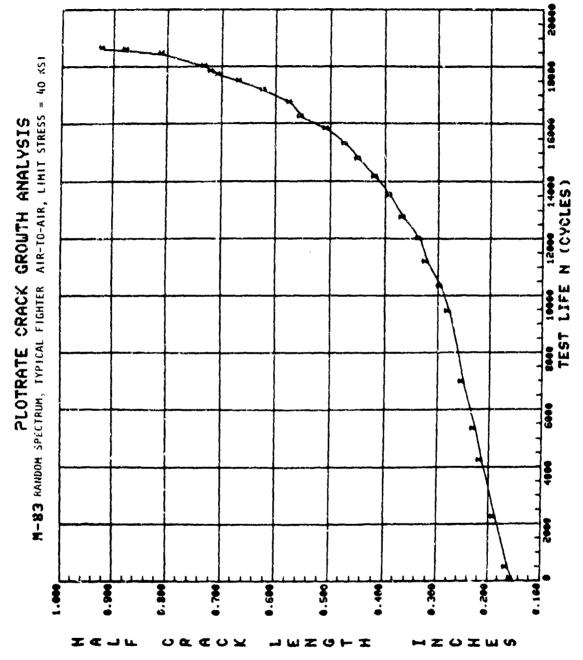


Figure 102. Crack growth curve for test M-83.

TABLE 103. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, AIR-TO-GROUND MISSION, A TYPICAL FIGHTER

Test M-84 $\sigma_{lim} = 30$ ksi, M-85 $\sigma_{lim} = 30$ ksi, M-86 $\sigma_{lim} = 40$ ksi

001	C HANG	JIM A-G	(4=450)							
900	~10.U*	70.0	24.6	41.4	4.2	20.1	7.6	48.9	6.3	37
003	H . 4	37.8	16.4	28.0	17.8	44.5	13.0	20.4	4.0	4
0 0 4	11.4	74.1	20.3	\$4.5	1.5	21.0	7.8	39.5	11.9	23
005	2.1	71.5	11.3	43.6	6.5	33.1	10.9	56.3	-10.0	51
006	0.6	18.4	7.0	55.4	31.7	48.6	3.0	17.3	4.4	
007	30.6	42.4	25.3	44.3	2.9	31.2				44
008	18.0	26.4	14.4	44.2			4.9	28.6	8.6	5.
				44.6	16.4	15.5		51.8	8.1	2
009	2.6	21.7	8.7	59.5	12.3	47.3	-10.0	67.1	42.2	5
010	14.5	35.4	11.8	27.8	5.5	19.6	3.7	27.7	5.9	3
011	0.6	20.6	9.5	22.6	12.5	41.6	0.5	26.4	10.3	3
015	-0.1	19.5	5.1	26.7	5.7	31.4	4.5	22.3	10.7	Ž
013	1.4	12.4	0.0	48.2	-10.0	31.1	7.1	23.7	6.6	39
014	12.1	44.2	11.0	78.4	4.4	29.2	5,2	29.5	6.7	3
015	16.1	26.3	11.0	37.8	5.8	17.2	-1.2	23.6	3.2	4
016	22.8	40.3	6.5	33.6	8.5	49.9	21.0	43.2	22.5	4
017	13.1	33.0	-10.0	25.1	8.4	78.6	11.3	42.4	5.5	3
018	10.6	71.7		35.1	11.2	32.1		46.3		
019	5.4	46.4	5.1			36.1	1.4		15.4	37
			9.1	24.1	8.5	40.8	21.2	42.7	9.4	\$:
050	3.0	20.4	3.1	48.1	26.2	30.5	4.4	46.0	3.0	20
021	-10.0	19.0	7.0	35.6	2.2	31.1	4.0	28.6	-0.0	5
053	7,2	30.8	11.1	35.7	11.3	40.1	9.0	29.4	16.0	5
023	-5.6	25.4	14.3	36.9	6.5	30.1	17.0	38.5	14.5	32
U24	6.4	50.1	8.6	35.2	-0.0	57.7	14.1	37.0	-10.0	\$
025	8.5	23.8	5.7	37.7	3.0	30.6	10.3	42.8	1.9	30
026	10.6	39.3	3.6	36.0	4.0	32.3	7.2	35.1	19.6	5
027	-0.0	47.4	3.0	50.1	14.6	32.0	7.5	21.2	2.7	21
028	12.2	37,9	0.3	33.6	15.3	45.0	-10.0	32.5	8.6	44
950	-0.4	75.6	-0.3	33.5	10.8	27.1	14.8	48.9		- ::
030	2.6	57.0	10.6	38.9	2.2	40.3		40.Y	17.9	39
		57,0	10.0				26.3	64.1	12.6	34
931	-14.7	53.9	17.3	62.1	27.3	39.1	8.7	30.5	6.4	49
250	23.4	47.8	10.3	33.8	-10.0	70.0	-0.5	35.3	1.7	50
626	3.1	41.4	0.5	25.8	13.9	30.7	15.9	53.5	1.3	34
34	0.2	20.1	10.0	25.0	5.2	50.4	1.6	36.8	4.5	30
35	3.3	48.7	0.3	26.9	2.5	18.9	2.5	58.5	17.3	21
36	4.5	33.0	-10.0	32.8	3.0	35.7	7.5	41.9	27.6	39
37	6.2	19.5	8.2	12.1	11.4	31.7	-0.4	18.6	2.5	60
38	13.5	64.0	5.0	29.6	16.9	41.6	1.8	36.2	3.9	50
19	4.2	34.1	7.4	32.0	14.8	37.9	13.5	26.1	6.4	36
40	-10.0	46.1	22.5	38.5	3.2	33.0		20.1		25
41	2.5	69.4	5.2		17.5		13.9	25.0	15.3	30
			3.6	34.4	17.5	30.2	10.0	34.3	16-1	45
42	11.8	30.6	11.8	35.7	12.0	24.8	5.8	21.0	7.0	54
4.5	11.5	42.4	1.5	59.3	24,6	47.9	6.2	25.4	-10.0	30
44	3.7	20.9	6.3	47.2	18.9	43.4	1.1	15.5	0.8	48
45	3.6	68.2	0.7	46.1	16.9	43.4	12.4	28.2	3.7	45
4.	5.8	49.5	10.8	35.5	10.7	44.8	3.4	34.2	1.0	16
47	5.1	53.6	3.8	45.8	4.6	34.6	-10.0	60.2	4.4	19
48	0.4	33.9	2.9	44.4	19.5	40.1	-1.2	37.2	0.6	40
49	22.3	50.4	23.3	40.0	1.7	54.0	3.0	24.2	11.0	30
50	-1.7	12.3	0.8	33.7	-10.0	30.6	5.0	27.0	0.4	39
51	12,2	45.2	10.1	29.5	2.4	38.9	16.8	31.7	-4.7	
52	6.5	19.8			4 4				-0.0	10
			-0.0	53.7	0.9	25.0	10.6	24.7	5.8	35
53	0.1	49.5	-4.5	29.5	5.8	21.5	5.2	21.5	5.4	46
54	4.6	26.3	9,3	41.0	19.3	44.9	4,9	33.0	5.9	24
55	12.3	50.7	-10.0	20.5	15,4	35.7	1.2	27.9	4.4	50
50	21.5	31.6	7.7	46.9	14.3	46.1	3.4	32.2	0,3	37
57	-0.8	24.9	14.0	43.8	10.2	37.5	7.9	36.1	0.4	67
58	13.9	51.4	4.0	25.9	15.2	54.4	7.7	54.2	0.5	69
54	-10.0	66.4	2.5	35.4	13.0	42,3	15.1	27.0	6.1	30
• 0	11.9	33.4	1.0	50.4	7.5	24.5	11.9	54.4	8.4	54
61	25.4	74.1	-0.5	00.5	21.8	44.7				
•5	20.4						7.6	43.6	2.5	36.
	cu.4	60.9	•.0	34.3	19.3	41.5	27.0	57.	-10.0	24.
of o								•		

TABLE 103. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, AIR-TO-GROUND MISSION, A TYPICAL FIGHTER (CONT)

SPE	CIRON LO	no legi	M-05 M	# 30) ksi M	1-86 o z.	= 40	ksi		
Test M-84	lim -	20 KS1,	M-03 V	lim	, 101, 1	li li	m			
9463	2.0	31.5	0.2	51.5	4057254032375112524047130507132510017405740323155047130505540579412594100713255	41.5	7.9 6.4 0.3 -10.0	46.4 26.4	5.1 11.2 19.1 18.3	19.0
0064	0.4	31.4	27.0	40.1	6.0	21.4 44.7	0.3	41.1	19.1	49.3
00.5	4.5	42.2	8.2	40.1	0.7	23.8	-10.0	45.0	18.3	68.5
_	11.9	24.0	14.0	14-1	3.2	4.52	0.3 -10.0 4.0 10.1 -0.0 15.1 8.3 21.6 6.3 12.4 2.2 5.4 12.7 7.8 12.7	24.4	11.9 7.4 4.9 10.3 10.7 10.7 10.5 10.5 10.5 12.2 12.2 12.3	48.6 21.2
0067	2.5	34.7	23.2	38.4	9.5	25.3	10.1	25.0	4.5	35.9
00+4 9400	-0.1	31.6	0.9	18.4	1 - 4	36.4	-0.0	16.3	10.8	55.1
0070	-3.8 -9.1 7.1 34.6 8.3	33.5	2.0	39.9	-10.0	35 - 7	4.3	50.6	13,3	57.1
0071	34.6	49.6	1.9	20.3	14.2	39.5	21.6	41.5	10.5	48.9
	8.5. 9.5.	34,5 41.6	19.7	47.7	11.3	54.4	4.1	51.4	10.7	28.5
0073	3.7 -0.1	57.1	-10.0	30.4	11.7	41.0	8.3	83.6 11.0	10.2	40.0
	-0.1	44.3	8.4	24.5	0.5	10 V	2.2	29.4	0.8	44.6
0076	14.4	42.4	3.0	31.4	9.1	44.5	5.4	25.8	10.5	31.7
0017	3.7	46.6	0.Z	44.4	32.2	34.1	16.0	38.9	0.0	78.9 31.0
0078	-10.0	25.1	-2.0	63.6	3.5	62.1	15.4	27.9	12.2	35.6
0074 0080	16.7	40.8	20.9	41.0	11.2	28.5	12.7	15.1	-10.0	26.7
9981	2.4	49.9	5.3	46.9	5.4	24.C	1.6	43.3	0.5	45.7
2000	5.0	49.5	15.3	26.2	-0.4	18.9	-2.3	31.1	10.4	30.6
0001	14.4 3.7 -10.0 -0.7 18.7 2.9 5.0 5.0 0.0 12.5 -0.1 18.3 21.3	47.0	4.0	70.0	-1.7	35.5	9.2	27.0	16.4	70.0 30.4
0084 0085	0.0	47.6 34.9 47.7 51.6 46.0 36.1	18.4	52.3	9.1	49.6	-10.0	40.3	4.2	22.5
0086	12.5	47.7	6.0	27.2	4.3	28.0	4.2	24.1	13.3	50.7
0087	-0.1	51.0	5,3	19.1	-1.5	37.6	7.4	50.7	2.9	34.1
0084	10.3	46.0	11.0	35.7	-10.0	50.0	4.9	25.2	14.2	25.3 33.2
0089	21.3 10.2	45.1	20.0	58.0	15.3	30.9	6 . 2	53.2	9.7	47.7
004U 0041	12.5	38.3	-0.9	35.1	4.6	4.54	-0.8	20.0	14.7	44.9
500	10.2 12.5 24.8 0.7	41.6	0.0	60.5	0.6	20.0	12.7 7.8 12.3 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10	46.6	0.3	14.5
6047	0.7	37.9	-10.0	24.0	20.0	50.8	-0.5	17.6	5.4	39.6
0094	*1.5	16.4	9.0	25.2	6.4	30.2	6.0	27.6	9,5	47.3
0095	22.9 11.3 -10.0 14.2 7.1	27.7	0.4	28.9	18.5	39.5	8.0	75.1	7.4 4.1	28.0
0096 0047	-10.0	64.0	8.1	35.0	14.4	52.9	-0.0	56.0	23.9	45,6
0093	14.2	53.4	10.1	35.6	4.3	35.0	7.9	32.1	10.9	65,9
	7.1	57.1	8.3	31.6	14.9	27,7	14.1	41.1	-10.0	50.8
0100	4.4 52.4 4.6 10.1	64.2	7.6	40.4	1.5	54.3	11.0	40.8	20.5	36,5 46,6
0101	4.6	35.7	14.7	25.6	7.1	24.0	9.1	33.3	8.1	31,8
0103	10.1	37.1	5.5	49.5	11.9	12.4	-10-0	52.3	0.7	36.0
0107	6.0	17.9	6.5	18.4	5.4	56.4	21.0	33.7	19.5	39,3
0105	0.1	24.6	/ • 5 H • b	60.3	4.2	.8.0	23.7	37.9	18.1	38.4 44.3
0106	29.1 4.9	21.3	6.7	54.4	21.4	50.2	9.2	23.5	5.8	48.9
ŭ 1 0 7 O 1 U B	11.7	29.6	5.4	26.2	-10.0	54.0	27.2	14.6	22.9	52.3
0109	3.5	30.5	5.6	54.9	7.4	40.2	6.3	27,7	1.8	49.1
0110	13.6	34.8	7.9	47.7	11.1	30.0	6.0	45.9	11.2 8.1 0.7 19.5 18.1 0.9 5.9 1.8 15.8 0.0	28.9
0111	8.9 10.4	38.4	-10.0	35.4	3.0	70.0	25.2	46,6	13.5	19.5 29.8
0112 0113	8.3	20.4	12.4	34.8	5.1	18.5	2.0	44.0	21.5	49.0
0114	2.0	26.8	2.8	17.3	5.7 5.4	39.5 42.6	9.1	39.2	12.9	32.2
0115	9,3	20.2	12.0	30.6 57.0	14.0	39.9	13.9	45.7	0	48.8
0116	-10.0	25.4 24.7	8.4 7.9	33.7	14.4	41.2	21.9	56.4	10.7	40.2
0117	0.1 2.7	49.3	34.3	40.0	. .u	50.1	8.	24.9	3.6 -10.0	15.1
0114	-5,5	30.4	11.0	28.7	• • • •	28,7 47,2	1.7	24.9 25.9	4.9	42.5
9120	4.4	15.9	21.0	34.3	5.7	55.0	15.5	30,1	5.1	50.6
0151	21.7	12.0	15.0	33.0	4.11	35.4	15.2	46.3	4.55	72.6
2510	13.2	37.0 35.3	14.7 5.6	43.2	\$.u	22.0	-10.0	54.2	0.0	12.5
0123 0124	14.6	33.3	11.0	25.7	6.4	27.6	14.5	42.6	12.2	29,4
0125	3.7	44.8	4,1	21.1	0.8	47.3	6.6 0.1	21.0 46.8	0.1	37.1
0126	2.0	24.0	5.1	65.8	1.0 4.01-	21.5	-0.0	35.4	18.7	37.2
0127	3.4	30 . 7	1.0	27.1 45.5	2.0	37.2	10.2	27.7	3.4	44.6
0128	-0.U 32.8	25.1 45.9	4.9	35.1	15.4	51.3	23.2	54.1	0.2	40.2
0154	35,0	7 4 6 7	• • •	•						

TABLE 103. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST. AIR-TO-GROUND MISSION, A TYPICAL FIGHTER (CONCL)

Test M-84 σ_{lim} σ_{1} = 20 ksi, M-85 $\sigma_{1\text{im}}$ = 30 ksi, M-86 $\sigma_{1\text{im}}$ = 40 ksi 0130 61.9 8.9 1.0 57.0 43.9 31.6 0,1 65.0 6.5 26.9 0131 3.6 57.9 -10.0 40.8 30.1 49.7 9.7 17.4 31.0 0132 0.6 47.4 10.4 24.1 2.1 13.9 1.2 17.1 3.9 52.1 0133 36.8 53.2 -0.2 65.2 13.3 30.8 3.7 39.2 4.3 47.5 0134 15.8 40.5 53.4 15.3 4.2 43.1 49.6 5.6 6.4 33.3 0135 -10.0 66.0 30.7 31.4 0.2 24.1 13.4 42.0 23.1 -2.5 13.3 0136 1.4 34.3 11.2 45.2 9.6 40.2 0.9 10.2 47,7 0117 1.1 40.6 13.2 30.6 6.0 30.2 0.4 67.9 10.4 37.5 29.1 0138 14.1 40.3 7.4 17.6 54.0 21.6 40.2 -10.0 20.1 0134 8.5 55.8 27.1 48.0 8.0 2.4 31.0 22.0 3.6 63.9 0140 4.1 50.7 0,3 11.4 60.9 -0.7 46.1 5.7 20.5 46.6 0141 -0.2 70.2 3.5 25.5 19.8 2.0 52.4 31.5 12.0 34.3 0142 1.3 \$3.5 19.1 44.1 9.7 \$5.8 -10.0 4.6 5,5 40.0 15.4 0143 8.3 45.3 10.4 9.3 32.7 6.0 64.3 18.7 47.0 0144 15.4 37.0 8.6 42.4 6.5 45.4 16.5 30,2 15.4 58.0 7.1 0145 49.5 11.5 74.8 8.5 34.8 5.2 11.9 48.8 71.6 0144 26.8 28.4 50.1 10.1 3.6 -10.0 44.1 58.0 11.3 52.7 0147 20.4 33.3 17.6 46.8 45.2 11.2 50.0 18.0 31.4 0148 0.4 20.3 6.3 48.5 2.4 35.9 4.3 27.5 13.0 23.8 0144 -10.2 20.2 3.0 24.5 12.3 28.6 13.0 29.5 14.1 36.1 0150 49.4 0.3 -10.0 53.1 10.7 50.9 8.4 41.6 15.0 29.9 7.3 0151 4.7 47.0 35.9 14.6 41.9 21.7 52.3 0.7 45.0 0152 2.7 29.6 26.0 7.0 2.5 34,6 6.8 40.4 9.0 0153 29.4 4.2 38.4 29.2 1.3 16.4 -1.4 15.6 4.4 0154 -10.0 21.4 2.0 32.3 0.2 50.4 5.9 55.7 1.2 20.8 0155 6.5 40.2 17.1 35.5 9.1 22.5 11.5 77.7 5.5 32.4 0150 10.3 41.3 59.7 5.2 25.4 1.7 5.8 23.3 8.7 76.7 0157 7.5 25.4 38.6 11.5 -10.0 6.1 63,2 18.1 35.0 2.2 0158 1.4 40.8 35.1 63,2 4.2 28.4 -0.1 21.6 1.9 48.6 0159 12.7 56.1 35.1 14.4 -2.3 60.0 3.0 10.8 25.4 39.5 0160 1.3 25.7 15.5 34.4 8.9 19.4 5.4 29.0 0.0 41,3 7.6 24.0 0161 10.4 37.0 -0.0 25.7 -10.0 33.5 18.2 58.0 0162 2.3 11.5 \$2.5 29.8 45.4 16.5 0.3 48.9 2.1 39.7 0163 6.2 30.4 0.5 7.5 44.1 8.7 37.5 17.9 34.5 47.2 0164 24.7 57.9 -3.1 14.9 60.1 32.4 28.6 68.5 14.3 27.7 0165 7.6 19.5 5.4 53.3 -10.0 31.5 11.9 15.4 63.8 68.5 2.5 0166 15.6 34.7 26.3 14.0 1.2 4.0 67.3 11.1 34.9 4.6 0167 27.3 15.6 64.5 20.4 32.6 32.3 6.0 21.3 55.6 0168 24.5 54.4 0,6 24.2 2.5 2.4 20.8 5.8 41.4 41.7 11.9 0169 44.4 14.3 -10.0 24.8 34.5 35.1 14.4 17.0 1.54 0170 43.5 6.5 54.4 9.6 71.3 2.3 36.5 26,7 0171 1.7 \$6.4 16.4 34.2 1.0 24.6 38.0 37.2 0.0 28.5 0172 7.3 27.4 15.5 35.2 14.5 38,9 3.3 44.8 2.6 51.0 0173 -10.0 37.2 9.5 27.1 3.3 26.1 6.5 20.0 10.6 24.1 49.1 9174 13.7 -0.5 51.4 53.0 9.9 6,7 Ž5.3 26.2 30.4 0175 13.8 54.9 7.4 20.8 0.0 16.7 4.3 33.0 -1.2 23.2 0176 0.4 14.2 3.7 56.0 52.7 8.95 1.2 42.2 -10.0 15.7 10.5 0177 0.5 63.5 30.5 24.8 1.2 34.5 1.9 62.0 1.4 0178 -1.7 34.0 5.7 56.3 33.3 47.5 0.7 25.5 12.3 42.1 4.4 0179 21.5 10.9 26.2 39.5 42.6 14.5 49.1 40.4 12.0 4 . H 43.3 12.0 44.5 -10.0 7.4 33.8 36.2 0.5 15.6 0181 -0.4 40.4 -0.0 28.6 3.4 17.0 52.9 0.1 -1.1 25.4 11.1 0195 41.5 4.2 15.5 5.7 \$0.0 -0.U 43.7 0.0 30.3 0183 5.5 50.0 1.7 17.1 0.5 20.2 4.5 19.5 20.5 34.3 4.4 0184 17.1 3.0 56.4 -10.0 35.3 6.8 73.5 16.2 46.5 0185 7.4 0.4 34.0 64.6 1.0 36.0 2.1 36.5 15.5 35.4 0186 15.5 \$4.4 6.4 56.3 4.7 39.5 0.7 14.6 40.5 27.8 0187 17.0 6.7 56.6 56.4 21.0 43.1 54.5 1.8 -0.4 -10.0 33.8 0188 22.6 26.6 4.4 40.2 2.1 56.5 2.2 40.2 0184 3.5 22.5 19.7 21.3

4.6

8.6

11.5

0190

0191

9.2

6.0

57.0

37.7

7.0

27.5

24.0

40.4

CALL CONSTRUCTION

70.5

45.1

25.1

20.5

-0.4

6.5

45.3

69.8

26.1

0.1

4.7

11.5

22.5

37.5

TABLE 104. IMTA TABULATION FOR TEST M-84

			DA/DN	1.082E-06	1-1396-06	1.4726-06	-	1.9756-06	2.386E-06	2.645E-06	2.851E-06	2.915E-06	3.126E-06	3.2805-06	3.4476-06	3. 712E-06	4.150E-06	4.838E-06	5.276E-06	5.811E-06	6. 156E-06	6. 704E - 06	6.669E-06	6.852E-06	7.375E-C6	7, 718E-u6	8.227E-06	9.000E-C6	9.9116-06	1.070E-05	1.180E-05
			DELTA K	8.56	9.10	9.87	10.43	11.01	11.62	12.31	12.59	12.96	13.62	14.24	14.67	15.19	15.61	16.13	16.68	17.34	17.64	18.03	18.37	18.17	19.11	19.66	20.38	21.07	22.06	22.85	23.71
S = 20 KSI	.000 HZ		K-MAX	7.24	7.70	8.35		9.3	9.83	10.42	10.66	10.01	11.70	12.05	12,42	12.86	13.21	13.65	14.12	14.67	14.92	15.26	15.54	15.88	16.17	10.64	17.25	17.43	19.61	19.33	20 • 06
AIR TO GROUND LIMIT STRESS	TEST		MULT. CORR. COEFF	0.996543	0.997048	0.997485	0.998215	500665-0	0.496636	76796600	0.996235	0.992219	0.994200	0.993259	0.995361	0.995216	0.997689	0.997807	0.998027	185266"0	0.997388	0.996138	0.994310	0.995847	0.997359	0.998145	0.999154	0.99948d	4.599652	0.999161	0.998590
SPECTRUM TYPICAL FIGHTER, AIR			A (REGRESSICN)	0.316	U. 356	0.419	104.0	610.0	0.57	0.646	0.675	0.715	0.809	J. 956	J. 906	0.967	1.017	1.082	1.151	1.235	1.274	1.325	1.369	1.423	1.467	1.542	1.639	1.732	1.865	1.971	2.087
RANDOM SPECTRUM	P MA X=	AMBIENT AIR	A ! MEA SLEED!	0,315	0.365	4.0 4.1		075.0	U. 25 C	0.640	0.670	0.725	ري ۾ . م	J. 876	0.855	0.565	1.025	1.060	1.145		~	1.320	1.360	1.425	1.460	1.535	1.635	J. 74C	1.860	1.570	2.057
J &	,	*NUTTIONCO I	CYCLES	•	19591	44550.	7,000	- 2070	.00+00	102117.	107597	113754.	128683.	136642.	144520.	153199.	160152.	167203.	174275.	181860.	185016.	189002.	147761	196250.	199407	204442	2107012	216224.	223022	228275.	233679.
SPECIMEN NO.:	H	ENV FRONMENT	NO.	~ (~ (7 4	PU	^	۰,	~ (ac (σ,	2	, ma	12	<u>.</u>	7	5	91	<u> </u>	9 9 (61		17		67	5 7	52		2.7	28

TABLE 104. DATA TABULATION FOR TEST M-84 (CONCL)

				NG/ V O	1.356E-05	1.549E-05	1.736E-05		2.153E-05	2.546E-05	2.854E-C5	3.272E-05	4.086E-05	4. 725E-05	5.1765-05	5.597E-05	6.724E-05	7.751E-05	8.8456-05	1.115E-04	1.367E-04	2.06 dE - 04	3.038F-04	3.837E-04	5.6046-04
				DELTAK	•	25.86	26.71	27.75	28.58	29.44	30.39	31.71	32.85	33.43	34.37	34.96	36.46	37.73	38.61	40.03	41-16	43.00	45.26	46.66	50.21
RESS = 20 KSI		6.000HZ.		K-MAX	21.29	21.88	22.60	23.48	24.18	24.91	25.72	26.83	27.80	28.29	29.09	29.59	30.85	31.93	32.07	33.91	34,82	36,39	38 . 30	34.48	45.49
SPECTRUM, TYPICAL FIGHTER, AIR TO GROUND, LIMIT STRESS =	AN= 0.0 IN.	TEST FREU= 6		MULT. CORR. COEFF	0.99849	7688650	0.999613	0.999340	0.999580	0.998510	0.998712	0.998734	0.492592	0.991925	0.991036	0.991393	0.993686	0.991726	0.997801	0.998322	0.992124	0.976954	0.986097	1995660	1.000000
TYPICAL FIGHTER,	F* 6.000 IA.			A (REGRESSICA)	2.277	2.366	2.474	2.601	2.700	2.800	2.907	3.049	3.167	3.225	3.316	3.371	3.505	3.612	3.682	3,794	3.872	3,997	4.137	4.217	4.400
RANDOM SPECTRUM,	0.250 IN.	P MA X#	. AMRIENT AIR	LREDI		2.365	2.480	2.555	2.70	2.860	2.965	3.040	3.160	3.215	3.265	3.355	3.515	3.590	3.665	3.750	3.875	3.960	4.160	J	074.4
# · · · · · · · · · · · · · · · · · · ·	6		CONDITION:	CYCLES	241285.	244515.	24 7962.	251404.	253917.	256205.	256258.	260624.	262291.	263018.	263963.	264527.	265584.	266341.	266834.	267449.	26 7791 .	268229.	268561.	268701.	268908.
SPECIMEN NO.:	CCT SPECIMEN	=N] Nd	ENVIRONMENT C											96					n ,		42			89	5

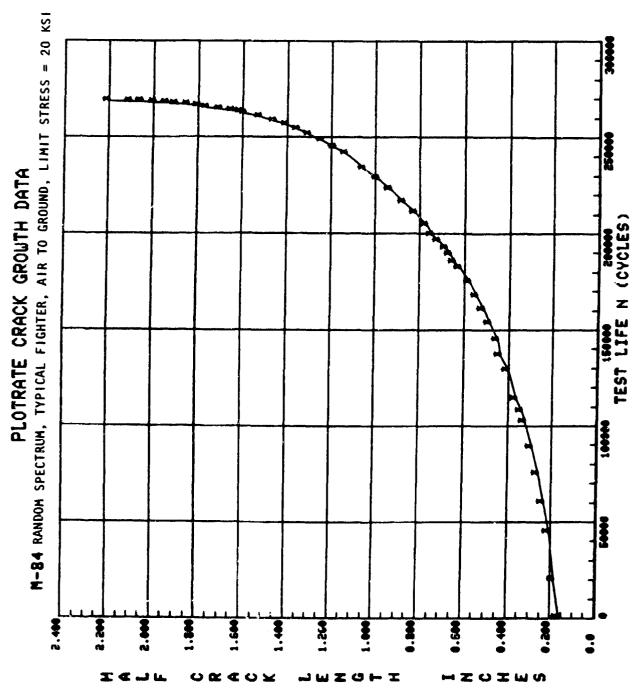


Figure 103. Crack growth curve for test M-84.

TABLE 105. DATA TABULATION FOR TEST M-85

KSI
2
■ 30 KS
STRESS
LIMIT
O GROUND,
=
A
TYPICAL FIGHTER, AIR TO GROUND,
TYPICAL
RANDOM SPECTRUM,
RANDOM
M-85
N NO.:
SPECIMEN

		TEST FRED		• 74	
A [R					
0 P	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	DA/DN
	0.288	0.995998	10.37	12.25	1.261E-06
	0.344	0.997163	11.35	13.41	2.928E-06
	104.0	0.998073	12.26	14.48	3.9716-06
	964.0	0.998440	13.62	16.09	5.231E-06
	0.569	0.998530	14.64	17.30	6.059E-06
	0.645	0.998743	15.60	18.44	7.012E-06
	911.0	0.997826	16.44	19.43	8.008E-06
	0.177	0.999324	17.19	20.31	9-4056-06
	0.832	0.999251	17.81	21.05	1.0186-05
	0.908	0.998874	18.65	22.04	1.1136-05
	0.989	69+666*0	19.51	23.05	1.1996-05
	1.080	980666.0	20.45	24.17	1.285E-05
	1.164	0.998852	21.31	25.18	1.373E-05
	1.228	0.959031	21.94	25.92	1.551E-05
	1.288	0.998953	22.53	26.63	1.656E-05
	1.340	156866-0	23.03	27.22	1.763E-05
	1.405	0.997961	23.66	27.96	1.963E-05
	1.479	0.998620	24.36	28.79	2.164E-05
	1.555	0.997792	25.08	29.64	2.4776-05
	1.649	0.998979	25.97	69.08	2.815E-05
	1.759	0.999305	27.00	31.90	3.2596-05
	1.825	0.999155	27.62	32.64	3.5426-05
		0.999183	28.62	33.82	3.978E-05
	1.931	0.998598	30.55	36.11	5.094E-05
	1.931 2.134	•	31.75	37.52	5.950F-05
	1.931 2.134 2.257				
	1.951 2.134 2.257 2.367	0.999733	32.83	38.80	1-10+1-7
	1.931 2.134 2.367 2.500	0.999733 0.996353 0.995676	32.83	38-80 40-39	7.140F-05 8-990F-05

TABLE 105. DATA TABULATION FOR TEST M-85. (CONC!)

53
20
4
STRESS
AIR TO GROUND,
≃
TYPICAL FIGHTER
3
TYP
WINDOM SPECTRUM,
RAMDOM
¥-85
3
PECIMEN NO.
S

		DA/DN 1.465E-04 1.759E-04 2.304E-04 3.062E-04 4.080E-04 4.445E-04 2.233E-04
•		DELIA K +3.10 +4.34 +6.14 +7.53 +9.71 50.88 52.08
= 6.00 H7.		K-MAX 36-47 37-52 39-04 40-22 42-06 43-05 44-07
AN = 0.0 EN. TEST FRED =		MULT. CORR. COEFF 0.994132 0.997103 0.991402 0.989070 0.990365 0.9987142 0.998006
. 6.060 lw.		A(REGRESSION) 2.718 2.813 2.948 3.047 3.196 3.273 3.349
B = 0.250 IN. PNAX =	AMBIENT AIR	AIMEASURED: 2.720 2.810 2.925 3.060 3.155 3.275 3.390
	CONDITIONS	CYCL ES 94174. 94510. 94862. 95084. 95413. 95507.
CCT SPECIMEN	ENVIRONNENT CONDITION:	26 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5

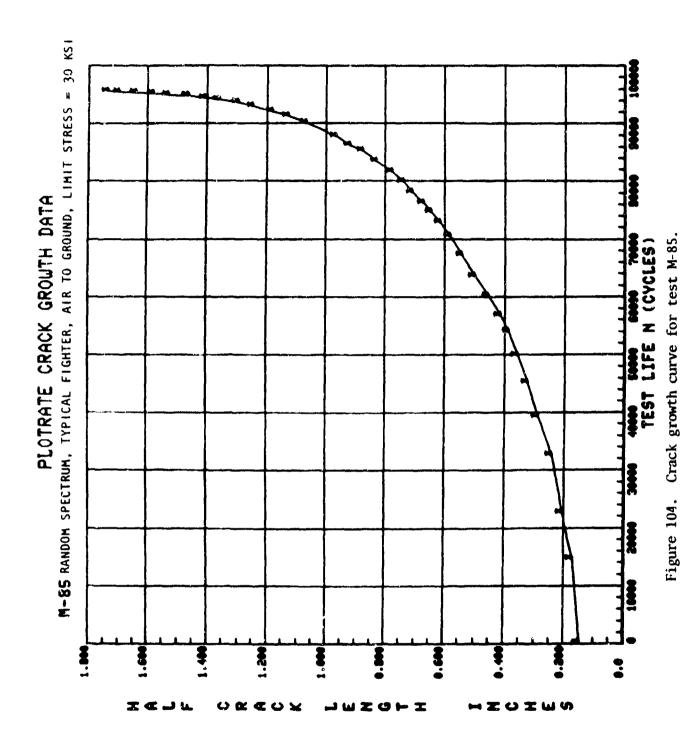


TABLE 106. DATA TABULATION FOR TEST M-86

RANDOM SPECTRUM, TYPICAL FIGHTER, AIR-TO-GROUND, LIMIT STRESS = 40 KSI A-16 SPECIMEN NO.:

CCT SPECIMEN		6= 0.250 IN.	W= 6.60. IN.	ANE U.O IN.			
PRIN:		PMAX=		TEST FREG= 6.	6.000HZ.		
ENVIRONMENT CONDITION:	COMDITION:	AMBIENT AIR					
₩0•	CYCLES	AIME ASURED)	AIREGRESSION	MULT. CCKR. COEFF	K-MAX	Det1A K	M2/40
-	•	0.305	0.365	672 655 0	14.44	_	2-4441-46
.~	5149.	0.345	0.352	0.997512	15.58	18.50	5.77.5-40
•	10072.	0.420	0.413	0.995451	16.97	20°15	8-2425-06
•	13301.	0.460	0.476	0.996220	18.14	c1.5+	1.000-1
•	16461.	0.530	0-546	0.995121	19.45	23.1u	1 -4 46 F-05
٠	17>86.	0.550	0.530	0.996140	19.69	23.61	1-342E-ú5
~	20023.	6.635	i. 639	6.9967.35	21.33	25.04	1.612r-u5
•	21632.	9.695	759-0	6.995715	42.50	26.13	1.8 /kg - ú5
~	233%.	0.760	0.762	0.998962	23.69	21.42	2-1451-05
9	24394.	0.605	608.0	0.558780	ćā.eb3	28.30	2 - 546 -65
==	25242.	0.855	0.347	0.996162	24.40	85.87	4.4431-11
12	26840.	0.6%	1.927	0.997612	55.59	30.39	cu-3151.22
13	28215.	6.995	.84	0.99625	16.10	21.71	3.1085-65
=	29457.	1.045	1.043	C-959152	27.51	33.03	3.050-15
<u>~</u>	30371.	1.155	1.152	0.999262	20.76	34.15	4-2.268-42
2	31098.	1.210	1.217	0.599242	64.63	35.19	4.6981-65
	31865.	1.2%	1.290	0.99656	30.61	36.35	5.21:1-15
3	32426.	1.355	1.345	904366.0	31.39	57.27	5 - is 26 £ - 15
6	33133.	1.425	1.434	0.997556	32.49	38.58	6 .0 PY-US
20	33906.	3.535	1.536	£55955*0	33.63	40.17	6.95ut-35
7	34448.	1.635	1.634	1228560	35.06	41.63	1.1655-04
5 5	35003.	•	1.767	0.992050	36.75	43.64	1.5756-64
23	356el.	1.936	2-016	0.955116	34.94	41.43	2.543F-64
5 *	35946.	2.130	2.161	0.986579	41.E2	19.64	3.517E-u4
52	36117.	2.256	2.288	0.59%652	43.51	51.61	4. TUSE-04
9 2	36163.	•	2.326	0.992203	44.04	52,33	4.935E-L
21	36242.	2.430	2-415	6.98863	45.22	53.70	5-232E-04
58	36397.	2.586	2.580	0.943966	17.51	56.42	43456.2

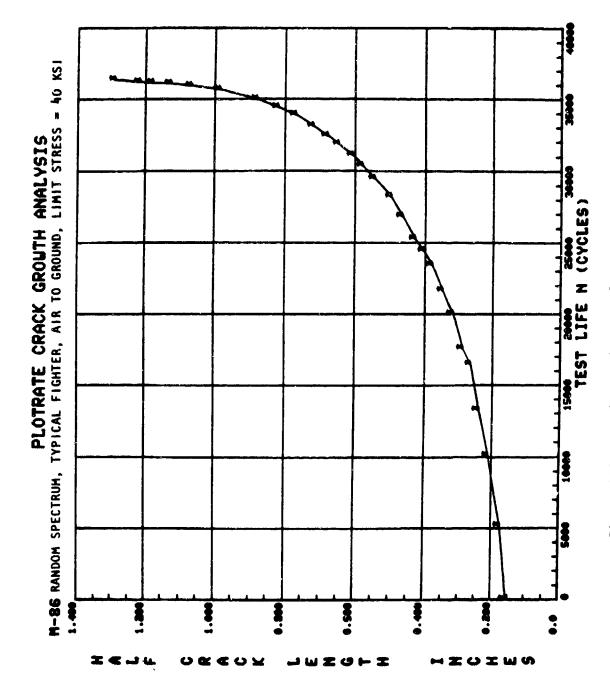


Figure 105. Crack growth curve for test M-86.

TABLE 107. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, INSTRUMENTATION AND NAVIGATION MISSION, A TYPICAL FIGHTER

Test M-88 σ_{lim} = 30 ksi, M-89 σ_{lim} = 40 ksi

0001	C HANG	/I)M [-R: (4=100)							
2000	-5.0*	70.0	16.8	28.9	14.2	31.7	13.9	33.1	13.4	28.4
0005	16.0	41.0	-5.0	29.4	14.4	31.3	16.3	31.7	13.7	29.2
0004	9.0	33.2	13.9	26.3	-5.0	33.0	14.6	26.7	7.3	31.4
005	10.9	30.3	13.0	27.0	14.7	32.3	-5.0	23.4	10.2	27.4
006	14.7	32.4	17.9	28.0	11.7	23.8	7.1	29.6	-5.0	34.1
007	15.3	44.5	11.4	35.8	8.2	25.8	6.3	24.5	13.2	20.6
000	-5.0	24.6	11.5	26.1	6.6	30.0	14.4	26.2	15.3	29.7
009	14.7	28.8	-5.0	30.1	7.4	29.7	17.1	29.3	11.3	25.8
010	13.0	31.5	13.7	50.1	-5.0	34.1	16.8	31.6	12.0	32,1
011	19.2	34.1	9.4	25.0	7.4	27.8	-5.0	24.4	15.1	23.4
015	12.3	22.7	10.4	31.0	19.2	30.7	18.1	24.2	-5.0	36.3
013	10.8	23.0	13.0	20.3	10.2	33.4	14.3	32.4	11.5	27.0
014	-5.0	23.0	9.4	26.3	11.6	30.6	10.4	30.0	14.4	20.4
015	15.9	29.3	-5.0	31.7	13.3	30.4	11.9	35.5	13.3	23.5
012	8.6	35.8	16.9	30.5	-5.0	40.8	16.2	27.6	13.7	32.6
017	15.6	27.5	14.5	27.4	5.8	33.9	-5.0	35.1	14.7	28.2
019	17.2	20.9	17.1	28.7	10.4	37.2	7.1	85.9	-5.0	35.1
014	16.4	28.4	13.5	30.7	10.6	39.1	16.2	27.2	10.5	22.1
950	-5.0	40.1	11.7	24.2	11.5	31.1	10.7	38.7	10.1	24.3
150	17.6	28.4	-5.0	33.0	10.0	36.7	14.5	28.9	12.4	30.7
045	17.6	37.3	13.4	27.9	-5.0	27.7	15.6 -5.0	25.7	15.2 16.9	24.7 27.6
057	13.0	39.0	16.1	26.3	13.6	29.8	6,3	36.8 39.3	-5.0	30.6
1024	12.7	20.2	9.4	29.0	15.2	28.8		35.7	16.4	32.4
625	11.9	35.7	10.7	26.7	14.9	34.0	15.1	35.7	9,3	27.6
026	-5.0	39.6	10.5	26.5 25.9	15.7	25.8 40,4	9.1 15.1	28.4	17.2	34.4
027	14.6	39.6	-5.0 14.6	25.4	-5.0	34.1	18.0	31.6	14.2	34.4
950	15.2 16.0	30.8 29.7	10.2	24,4	10.0	34.4	-5.0	31.5	11.5	25.5
450	15.0	31.6	15.9	36.9	16.9	38.6	11.1	29.5	-5.0	31.3
034	14.3	30.6	9.4	33.2	16.7	29,5	12.7	34.3	15.6	26,7
075	-5.0	27.3	13.0	23.6	3.7	30.1	i7, i	35.2	11.3	39.1
033	14.2	24.6	-5.0	24.1	13.3	31.3	15.5	29.8	10.9	21.6
034	9.1	32.3	11.5	45.4	-5.0	32.9	14.2	37.7	16.1	36.8
035	16.0	43.4	13.5	24.6	13.4	24.7	-5.0	41.2	6.6	30.9
036	20.1	37.0	16.1	34.0	14.0	27.7	12.5	4.56	-5.0	29.1
037	10.5	27.1	12.0	36.0	14.1	20.5	17.6	34.4	17.0	31.4
038	-5.0	27.1	10.2	35.9	17.8	31.1	6.0	35.7	10.7	38.6
039	15.0	36.5	-5.0	27.1	14.7	39.9	18.9	29.9	14.3	34.1
040	12.7	37.6	15.3	32.0	-5.0	34.3	16.0	33.7	13.4	24.5
041	15.2	32.4	18.5	29.0	0.4	35.1	-5.0	31.2	11.7	20.5
042	14.4	26.4	9.6	29.7	9.1	26.9	12.3	23.9	-5.0	25.9
043	13.1	33.0	9.0	28.0	9.9	35.4	15.2	34.0	12.5	26.6
044	-5.0	24.4	12.1	41.3	20.9	32.6	20.3	34.6	12.7	24.0
045	12.4	26.7	-5.0	25.5	12.9	33.4	11.2	35.3	12.3	26.7
046	10.4	24.9	14.2	30.5	-5.0	27.6	16.4	30.9	4.2	25.1 27.0
047	12.3	32.3	14.2	35.4	10.5	35.4	-5.0	26.5	11.6	27,0
048	15.1	28.0	16.0	28.7	12.8	23.9	8.5	32.9	-5.0	34.1
049	13.4	31.5	10.5	42.7	18.3	20.3	6.2	35.2	14.1	31.7
050	-5.0	29,8	16.5	32.4	12.0	27.8	13.8	34,3	10.6	27.2
051	9.7	38.0	-5.0	27.5	7.4	30.7	13.4	32.7	16.6	35.4
652	6.2	39.1	14.5	35.5	-5.0	27.3	14.7	37.9	30.9	42.1
1055	17.5	26.4	9.7	27.2	20.4	36.3	-5.0	29.9	4.1	52.7
054	13.1	26,5	14.4	35.5	17.4	39.0	0,9	52.3	-5.0	23.7
055	9.4	34.2	23.7	39.7	9.8	19.9	13.0	17.0	4.9	23.2
056	-5.0	46.4	17.7	31.0	11.2	23.2	10.0	10.1	8.3	39.0
057	25.2	42.5	-5.0	23.5	0.4	32.9	11.4	21.3	15.0	33.8
058	15.1	31.4	9.0	37.9	-5.4	50.5	13.3	29.3	10.6	27.7
1059	14.0	43.2	4.0	37.2	1.55	37.0	-5.0	30.0	14.1	25.3
960	14.2	35.6	16.7	\$0.4	37.9	4/-1	11.2	18.4	-5.0	48.6
961	18.9	30.5	17.4	25.3	12.5	21.6	7.9	17.0	2.6	27.2

 * % of σ_{lim}

TABLE 108. DATA TABULATION FOR TEST M-88

RANDOM SPECTRUM, TYPICAL FIGHTER, INSTRUMENTATION AND NAVIGATION, LIMIT STRESS = 30 KSI H-+6 SPECIMEN NO.:

PHIN=							
		FMAX=		1c51 FAEQ* 6.	6.000HZ.		
ENVIRONMENT	CONDITIONS	AMBIENT AIR					
%	CYCLES	A (MEASURED)	A (R EGRESSION)	MULT. CORR. LUEFF	X-M-X	DE LTA K	JAJUN
_	•	0°.400	J. 301	0574750	7-64	10.33	6-7396-0
٧.	21035.	0.335	0.315	0.960852	9.86	10.57	3.6055-41
•	65550.	0.360	6.403	0.974422	11.14	11.93	1-0445-06
*	92356.	0.4.0	0.413	0.982441	11.51	12.12	1-1634-06
s.	110797.	0.465	6.457	0.92752	16.11	12.76	1.4748-06
•	127651.	0.510	0.518	0.995132	14.60	13.57	1-7106-60
-	143558.	0.570	U-574	0.596551	35.54	14.32	1.7506-30
∞	165107.	0.670	0.657	0.996823	14.32	15.35	2。ひかんこうし
•	184205.	0.735	0.741	6<92650	15.24	16.33	2.186 £-û6
07	198731.	0.7%	C-8C5	0.4954.0	15.94	17.05	2-242E-06
11	206346.	0-t6C	0-847	144486-0	16.34	17.51	2 - 2 40E-08
75	219261.	9 7. 0	05.0	6.467715	19.61	16.0b	2.5126-66
13	220174.	0.940	2.944	0.534083	17.30	15.54	2.647£-06
14	733995.	096.0	0.974	C.991284	17.59	18.65	2.564E-06
15	239522.	1.620	1.009	0.971346	17.92	19.20	3.390E-06
16	245847.	1.066	1.059	979166*0	18.40	19.71	3.6726-66
17	254683.		1-126	778666.0	19.63	50.35	3.d 58 t-66
16	258937.	•	1.157	0.995713	19.30	20.60	3.8406-06
19	267413.	1.223	1.225	0.995519	16.61	21.34	4-1 Joe-46
20	271544.	•	1.257	0.993475	20.20	ž 1.65	4.5 7uk-06
23	277677.	•	1.312	61.949.0	50.69	12.81	5-0776-60
22	262663.	1.365	1.371	6.997512	21.21	22.72	5.5166-06
23	267893.	1.435	1.431	0.996463	21.73	23.28	5.5634-06
4.	29241t.	1.490	1.465	0.995219	22.25	23.79	5.7426-06
52	256480.	•	1.528	0.957769	22.51	24.10	5.659E-46
92	305816.	•	1.625	E38846*3	23.40	25.08	5.6181-06
į,	315094	1.725	1.733	757654.0	24.32	26.06	40-3490-9

TABLE 108. DATA TABULATION FOR TEST M-38 (CONCL)

RANDOM SPECTRUM, TYPICAL FIGHTER, INSTRUMENTATION AND NAVIGATION, LIMIT STRESS = 30 KSI SPECIMEN NO.: N-88

PHIN=		PMAX=		TEST FREQ= 6.000HZ.	.000HZ.		
ENVIRONMENT CONDITION:	COMDITION:	AMBIENT AIR					
NO	CYCLES	A (MEASURED)	A (REGRESSION)	MULT. CORR. COEFF	K-MAX	DELTA K	DA/DN
62	328954.	1.920	1.914	0.999582	25.67	27.12	7.017£-06
30	336739.	2-025	2-030	741466-0	26.87	28.73	7.566E-06
31	342931.	2.125	2.124	0.8949.0	69.12	19.67	7.937E-UD
32	349757.	2.235	2.234	0.999eol	29.66	30.73	E-564E-06
33	354381-	2.315	2.313	6.996645	29.36	31.40	9.074E-UD
**	359161.	2.400	2.404	0.995088	30.16	32.34	1-1426-05
35	364506.	2.510	2.529	0.596745	31.34	33.54	1-4571-05
36	366884.	2.605	2.599	0.998667	32.00	34.68	1.6+76-05
37	370162.	2.715	2.714	0.976468	33.12	35.40	2-0-11-0-5
38	372331.	2.615	2-BCS	0.993279	34.02	36.45	2.4 Jut-05
39	374623.	2-895	2.917	0.993441	35.17	37.68	3 .1 76E-US
40	376796.	3.050	3.059	0.923364	36.69	39.31	4-535E-05
+1	378199.	3.175	3.193	0.980423	36.18	40.91	6.554t-05
42	379698.	3.345	3-419	6.977569	40.96	10 10 10 10 10 10 10 10 10 10 10 10 10 1	9-647E-05
43	340131·	3.450	3.505	0.922105	42.03	45.00	1-3756-04
77	380443	3.610	3.610	9-3530 C	43 61	14 47	1.7-5 Apr C

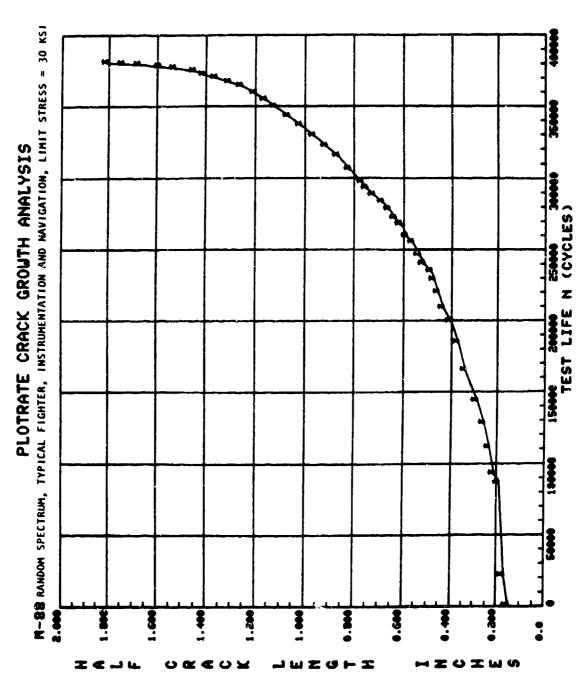


Figure 106. Crack growth curve for test M-88.

TABLE 109. INTA TABULATION FOR TEST M-89

RANDOM SPECTRUM, TYPICAL FIGHTER, INSTRUMENTATION AND NAVIGATION, LIMIT STRESS = 40 KSI SPECIMEN NG.:

FAIN:							
		FMAX=		TEST FREQ# 6	6.000HZ.		
ENTIRDIMENT	ENVIRONMENT CONDITION:	AMBIENT AIR					
MG.	CYCLFS	A (ME A SUK ED)	A (REGRESSION)	MULT. COKR. COFFE	K-KAX	DELTA K	200
~	3	C. 300	0.30	99660	12.54		7 3226-07
.~ .	:5075.	ů•3o:	0,353	6-997923	13.92	16.02	1.4265-0
•	48550.	0.430	0.438	0.996397	15.53	16-64	2.3166-06
•	· 02 +09	0.455	0.496	0.996981	16.54	17.72	2.7506-04
un.	72439.	0.566	0-566	0.997247	17.70	18.96	3.508F-06
۰	76324.	604.0	0.598	0.997006	16.20	19-50	3-7155-06
-	.09492	0.66.5	0.674	9767660	19.35	20.73	4-023E-06
£	56735	0.720	6.712	0.54.824	19.90	21.32	4-762F-06
• ;	\$£224.	0.760	0.776	0.994845	19.02	22.30	4-353E-06
20	107382.	308.0	0.814	0.992926	21.34	22.87	4-6#0F-06
	106339.	6.355	0.847	0.995143	21.79	23,35	5-017-F-06
2	112725.	0. 505	0.915	6418460	22 •69	24.31	5-150F-06
£ ;	115969.	C. 925	4%6°0	0.995139	23.20	24.86	6.479E-06
41	116576.	0.995	9 56 • 0	0.991425	23.66	25.35	6-4536-06
15	124360.	1.065	1.073	6.993262	24.71	26-46	7-334E-06
41	126751.	1.120	1.108	0.993543	25.13	26-93	7-340E-06
2 1	131171.	1.166	1-173	0.992876	25.93	27.78	7.926E-06
2	133849.	1.225	1.214	0.540634	26.43	28.32	8-6735-06
<u>بر</u>	137455.	1.270	1.277	0.994541	27.17	29.11	9.587E-06
97	139807	1.375	1.326	0.995122	27.78	29.76	1.065E-05
7	141305	1.365	1.358	0.597332	28.12	30.13	1-107E-05
'a . (a (143050.	1.415	1.414	0.998633	28.78	30.83	1-263£-05
57	145773.	7.465	1.467	0.999593	55.39	31.49	1.344E-05
42	147915.	1.525	1.525	0.599970	30.06	32-21	1 -469E-05
\$	151873.	•	1.649	0.998324	31.48	33.72	1-861E-05
9	122096.	1.735	1.735	9719650	32.01	76 76	
•					76.17	22.40	
7.2	157614.	1.655	1.904	0.994992	34.36	36-83	3-0896-05

TABLE 109. DATA TABULATION FOR TEST M-89 (CONCL)

				0A/DN 5.507E-05 7.940E-05 1.304E-04 1.888E-04 4.256E-04
TRESS = 40 KSI				DELTA K 40.13 5. 41.71 7. 43.67 11. 45.48 11. 48.80 2.
LIMIT S				
IGATION,	.COOHZ.	1		K-MAX 47 -45 38 -93 40 -76 42 -45 45 -55 48 -33
RANDOM SPECTRUM, TYPICAL FIGHTER, INSTRUMENTATION AND NAVIGATION, LIMIT STRESS = 40 KSI	AN= 0.0 IN. TEST FRED= 6.000HZ.			MULT. COKR. COEFF 0.994262 0.984200 0.957976 0.973569 0.985255 0.990911
M, TYPICAL FIGHTER,	N= 6.000 IN.			AIRFGRESSION) 2-170 2-295 2-446 2-562 2-819 3-013
RANDOM SPECTRU	,		AMBIENT AIR	# (ME ASURED) 2-155 7-250 2-50 2-50 2-740 2-075
₹ ₩	, Es 0.250		:NOITIONO	LYCLES 161303. 16240?. 163282. 162861. 164434.
SPECIMEN NO.:	CCT SPECIMEN	== Z [X d	ENVIRONMENT CONDITION:	\$ 3 3 1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

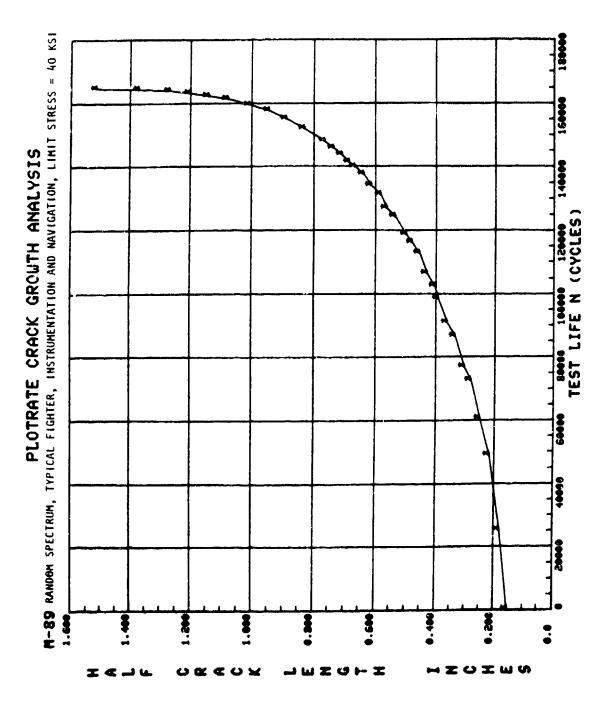


Figure 107. Crack growth curve for test M-89.

TABLE 110. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, COMPOSITE MISSION, A TYPICAL FIGHTER

Test M-90 σ_{lim} = 20 ksi, M-91 σ_{lim} = 30 ksi, M-92 σ_{lim} = 40 ksi

HEADH	1=00000 15	ON EU 05	•
1000	C MANUUM		
2000	-05.0~	70.0	10.1 74.
	36 3	44 6	

4441			1011F /	14737						
2000	-05.u*	70.0	16.1	54.1	20.1	45.5	25.0	55.3	36.4	56.7
0003	26.2	44.5	10.6	48.6	24.5	81.4	6.0	29.4	17.4	52.4
0004	17.5	29.5	10.2	74.4	10.0	50.6	12.5	53.7	17.3	45.7
0005				67.5		60.6		54.9	10.2	
	50.6	63.5	3.1	*	10.9		44.0			45.1
0006	14.7	34.0	20.4	58.4	31.2	45.6	27.6	63.5	9.4	69,7
0007	36.1	54.2	-5.0	74.4	27.6	42.9	27.9	41.0	9.4	3,,5
0000	16.0	40.2	5.2	39.1	19.5	51.9	9.3	31.4	19.1	48.6
0009	0.4	27.6	16.9	36.2	11.0	28.7	9.3	33.2	1.8	13.2
0109	1.4	50.2	18.6	31.8	19.1	48.5	34.0	43.7	24.4	16.5
0011	22.5	42.7	12.2	40.8	22.0	41.9	21.2	42.2	16.3	26.6
0012	-3.6	27.3	11.9	45.3	-5.0	48.6	14.7	46.6	23.6	57.2
						41.5			29.3	60.7
0013	36.4	58.3	32.7	44.7	27.1	_	29.7	61.1		
0014	19.8	43.5	28.5	74.9	19.2	46.5	22.4	38.3	5.1	52.8
0015	34.0	45.0	14.7	46.4	3. <u>u</u>	34.8	19.8	44.7	33.4	54.2
0016	25,4	38,7	10.3	36.0	18,5	63.7	17.7	56.1	11.7	29.3
0917	-7.5	41.4	15.3	33.6	9.7	36.1	-5.0	61.7	16.3	50.9
0018	30.1	47,9	25.4	52.1	24.4	65.2	-10.3	50.7	12.6	44.6
9100	32.1	47.0	24.3	38.4	19.6	46.2	23.4	42.3	3.5	9.52
0020	39.8	64.4	10.9	10.6	19.1	47.2	6.4	74.1	12.2	50.2
						39.2				50.0
0051	28.8	45.6	12.7	46.2	15.3		50.5	46.4	36.5	
0055	3.8	60.0	11.9	44.0	29.5	41.3	11.5	40.4	-5.0	47.4
0053	,6,4	44.3	32.4	50.5	16.3	55.1	-4.6	83.3	9.6	37.5
0024	24.1	97.7	10.2	34.4	22.2	65 <i>- 1</i>	24.8	47.5	13.4	55.9
0025	42.5	64.5	24.9	18.5	-22.0	61.8	36,2	66.4	39.4	40.9
0026	35.4	56.8	25.5	51.2	34.5	54.9	26.8	34.5	-3.7	81.0
0027	-1.6	47.0	12.5	59.6	0.3	53.9	7.7	45.3	29.7	44.4
0025	-5.0	44.2	5.5	33,5	15.0	36.1	2.7	58.5	2.0	40.0
0029	13,8	34.1	13,2	51.7	4.0	33.3	9.4	29.3	11.6	44 6
0030										68.5
	14.0	45.4	30.9	45.9	13.5	46.1	51.1	57.3	13.9	35.2
0011	18.7	37.3	19.3	40.6	1 - <u>1</u>	25.6	0.3	67.1	35.6	71.0
0075	21.5	51.4	12.5	42.8	11.3	41.4	8.55	47.5	17.9	40,9
200	17.5	55.1	-5.0	41.4	12.2	79.3	15.1	50.4	20.7	45.8
6034	34.3	59.1	20.3	45.5	29.1	52.9	12.0	45.1	30.9	44.0
0035	9,2	00.0	47.0	61.0	15.0	31.1	14.3	50.6	7.7	53.2
0036	39.7	1.80	6.6	20.5	6.2	56.5	9.3	75.7	12.6	52.7
0037	31.3	55.7	17.4	57.7	22.3	61.7	29.0	51.7	39.6	55.5
0038	12.2	42.6	8.1	25.8	-5.0	.0.0	13.5	56.0	14.8	63.7
0039	21.6	35.8	20.3	43.4	9.7	48.1	33.5	45.2	-7.3	47.1
0040	8,4	77.9	45.9	58.8	10.3	71.6	10.6	38.2	23.3	46.2
0041	-4.8	40.3	4.9	41.1	17.9	42.7	5.1	41.8	27.2	58.7
0042	24.8	42.9	13,3	46.0	1.2	26.5	-4.5	51.3	5.4	26.5
0041	15.4	34.3	8.6	39.0	5.3	60.3	-5. 0	5.50	13.0	34.4
0044	15.8	55.0	12.7	40.8	23.6	49.4	36.7	53.9	25.7	41.0
0045	18.2	33.3	22.5	46.5	3.0	44.7	6.4	39.4	22.5	64.3
0046	24.5	\$7.0	26.3	53.4	9.8	33.3	0.9	46.4	0.3	46.9
0047	24.5	47.4	55.3	47.2	6.3	77.9	25.4	74.7	18.7	64 - 1
004#	22.7	54.6	4.7	72.1	7.6	72.3	17.5	53.0	-5.0	59.3
0049	15.0	42,4	27.6	41.6	17.3	70.0	12.9	47.5	25.4	• • • • 3
0050	50,5	89.4	-0.2	69.5	47.1	60.2	13.1	66.1	11.6	71.4
0051	18.7	53.3	16.2	35.5	10.7	42.3	5.6	61.4	23.5	49.3
0052	19.1	51.0	1.3	45.7	15.9	12.5	20.9	43.4	28.9	47.3
0053	22.5	46.1	21.8	52.4	30.4	61.3	6.7	57.5	34.5	54.9
0054	-5.0	34.4	26.4	50.2	8.9	31.0	13.6	55.9	42.0	75.9
									-6.0	50.9
0055	16.6	50.3	34.6	46.2	11.4	66.4	11.7	55.5		
0056	37 , 6	51.0	55.2	17.5	14,6	24.7	1.2	33.1	6.7	36.8
0057	1.5	42.0	0.5	41.0	11.2	47.8	19.5	37.0	9.6	49.7
0054	~O _ 4	40.1	39.0	44.2	23.4	.0.5	14.2	40.4	23.3	45.3
0059	-10.0	70.0	89.6	41.9	4.2	20.1	7.8	48.9	6.3	37.1

^{*%} of σ_{lim}

TABLE 110. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, COMPOSITE MISSION, A TYPICAL FIGHTER (CONT)

Test M-90 σ_{lim} = 20 ksi, M-91 σ_{lim} = 30 ksi, M-92 σ_{lim} = 40 ksi

0040	8.4	37.8	16.4	26.6	17.8	49.5	13.8	26.9	4.0	42.9
0061	18.4	74.1	20.3	34.5	1.5	\$1.0	7.8	34.5	11.9	23.8
0062	2.1	71.5	11.3	43.6	8.5	33.1	10.4	56.3	-10.0	51.4
0065	0.6	18.9	7.0	55.9	31.7	48.6	3.0	17.3	6.9	44.1
0044	30.6	42.4	25.3	44.3	2.4	31.0	4.9	24.6	8.6	29.7
9945	18.0	28.4	14.4	44.2	16.4	35.2	8.0	51.8	8.1	23.3
0000	8.8	21.7	8.7	54.5	12.3	47.3	-10.0	67.1	42.2	57.2
0067	14.5	35.4	11.0	27.8	5.5	19.6	3.7	27.7	8.4	31.1
0008	0.6	8,85	9.2	55.6	12.5	41.6	0.5	26.4	10.3	34,3
0064	-0.1	19.5	5.1	26.7	5.7	31.4	4,3	55.3	10.7	24.5
0070	1.6	12.0	0.0	46.2	-10.0	31.1	7.1	23.7	6.6	35.2
0471	12.1	44.2	11.0	78.4	4.4	24.2	5.2	29.5	6.7	30.6
0072	16.1	26.3	11.0	37.0	5.6	17.2	-1.2	23.6	3.2	42.5
0073	22.0	40.3	6.5	33.6	8.5	49.9	51.0	43.2	22.5	45.2
0074	13.1	33.6	-10.0	25.1	8.4	78.6	11.3	42.4	5.5	34.6
097 5 007 6	10.6 5.4	71.7 46.9	5.1	35.1	11.2	32.1	1.4	46.3	15.4	37.3
0077	3.8	28.4	0.1	24.1	8.5	40.	81.5	42.7	9.4	23.3
0078	-10.0	19.0	5.1	48.1 35.6	86.5	38.5	4.4	40.0 28.6	3.8	54.0
0079	7.2	36.8	7.0 11.1	35.7	5.2 11.3	31.1 46.1	4.0	29.0	-0.0	53.1
0000	-5.6	25.4	14.3	36.9	6.5	30.1	9.0 17.0	38.5	16.0 14.5	51.5 32.3
0001	6.9	38.1	0.6	35.2	-0.0	37.7	18.1	37.0	-10.0	50.5
0002	8.5	23.0	5.7	37.7	3.0	30.6	10,3	6.54	1.9	36.7
0003	10.4	39.3	3.6	30.0	4.0	32.3	7,2	35.1	19.6	55.2
0044	-0.0	47.4	3.0	30.1	14.6	32.0	7.5	21.2	2.7	29.6
945	12.2	17.9	0.3	33,6	15.3	45.0	-10.0	32.5	8.6	46.5
0000	-0.4	75.0	-0.3	33.5	10.8	27.1	14.8	48.9	17.9	35.1
0087	2.8	57.0	10.8	38.4	2.2	48.3	26.3	64.1	12.0	34.4
0048	-14.7	53.4	17.3	42.1	27.3	39.1	4.7	34.5	6.6	45.3
6084	23.4	47.8	10.3	33.0	-10.0	70.0	-0.5	35.3	1.7	50.0
0090	3.1	41.4	0.8	25.8	13.4	30.7	15.9	53.5	1.3	38.9
6947	0.2	28.1	10.0	25.0	2.2	54.8	1.6	36.6	4.5	30.2
0645	3.3	46.7	0.3	26.9	2,5	18.9	2.5	58.5	17.3	27.6
0093	4.5	33.0	-10.0	32.8	3.0	35.7	7.5	41.9	27.8	39.7
0094	6.2	19.5	4.2	32.1	11.4	31.7	-9.4	18.6	2.5	60.7
0095	13.5	64.0	5.0	24.6	10.9	41.6	1.8	36.5	3.9	28,9
0046 0097	9.2 -10.0	34.1	7.4	32.0	14.8	37.9	13.5	26.1	6.6	25.7
0047	2.5	46.1 69.4	22.5	30.5	3.2	33.0	13.9	25.0	15.5	30.9
0049	11.6	34.0	5.2 11.8	34.4 35.7	17.5 12.0	30.2 24.8	10.0	36.3	16.1	45.6
9100	11.8	42.4	11.5	59.3	24.6	47.9	5.8 6.2	25.6	7.0	54.0
0101	-5.0	70.0	16.6	28.9	16.2	31.7	13.9	33.1	-10.0 13.4	30,6 28.4
0102	16.0	41.0	-5.0	29,4	14.4	31.3	16.3	38.7	13.7	29.2
0103	9.0	33.2	13.9	26.3	-5.0	33.0	14.6	26.7	7,3	31,4
9194	10.9	30.3	15.0	27.0	14.7	32,3	-5.0	23.4	10.2	27.4
0105	24.3	56.8	-5.0	67.6	22.5		32.4	52.2	29.9	56.5
0106	20.3	50.5	25.0	55.9	38.0	40.4	23.8	66.7	24.0	61.6
0107	10,6	45.3	21.5	44.1	6.8	60.4 30.4	1.0	58.5	17.4	29.3
0108	8.8	42.3	\$1.0	44.6	34.6	48.4	25.7	46.4	16.8	41.3
0109	-0.7	61,2	4.6	42.7	5.1	44.9	14.0	59.0	-0.7	64.7
0110	21.5	55.4	17.6	34.6	-5.0	36.9	7.5	55.0	29.8	51.4
0111	8.2	12.1	1.3	35.5	-3.8	70.1	8.5	73.6	21.9	49.6
0115	38.6	54.0	41.3	56.3	27.5	30.1	25.3	49.5	9.6	60.9
0113	13.9	53.4	14.9	34.7	15.4	41.6	15.3	30.3	19.4	54.7
0114	20.7	46.8	19.0	55.2	6.9	49.2	5,9	49.6	14.9	55.6
0115	-0.1	21.5	-4.7	27.4	15.5	56.4	-5.0	59,9	16.6	78.8
0116	+2,5	40.2	3.7	80.9	7.5	62.3	31.2	60.0	37.3	54.7
0117 0116	20.2	42.3 55.7	30.5	57.2	13.4	86.4	9.6	29.9	12.5	23.8
0119	-0.7 -0.6		-4.2	37.7	10.1	56.9	36.3	56.5	27.5	41.8
0150	20.2	47.6 37.6	23.3 21.7	42.3	10.0	50.6	30.6	50.0	15.0	37.6
4144	E 4 . E	37,5	E 1 . /	22.5	37.1	45.4	10.7	57.7	-5.0	37.8

TABLE 110. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, COMPOSITE MISSION, A TYPICAL FIGHTER (CONT)

	Test M-	90 σ lim	= 20 1	ksi, M-91	σ_{lim} =	30 ksi	, M-92	σ_{lim} =	40 ksi	
0121	24.6	42.7	1.6	19603476967.5.8227.837.0901454685576967.5.85446810.5.7228728846576565769677949353769677949353769677949353769677949353468105184697990020572884646666657698799002057696765446814561846575446466665769879900205769676544644465618464546666666666666666666666	13.4	62.1	4.4	52.7	2.6	68.3
0122	9.2	52.4	2.4	10.4	-5.1	56.3	35.8	53.2	1.7	52.1
0124	35.6	70.2	28.3	40.0	25.2	44.2	20.4	35.2	17.6	37.4
0125	26.4	53.7	20.7	34.3	8.1	45.5	34.6	46.7	23.9	84.7
0156	+5.0	82.4	21.1	54.4	30.5	60.1	5.8	35.7	14.5	60.4
012/	23.2	40.4	14.4	43.5	24.00	74.2	12.6	34.7	23.3	37.5
0129	24.9	36.9	26.5	55.5	22.5	66.8	52.5	65.0	23.9	56.2
0130	12.7	61.0	27.4	53.4	13.3	37.9	20.5	33.5	25.2	40.3
0131	25.7	62.8	-5.0	53.4	21.5	61.9	24.8	48.5	6.9	31.1
0132	18.1	41.4	14.8	27.1	10.4	61.2 Eq. (8.5 20.2	71.1	3,1 24.0	74.1
0114	28.3	52.1	14.8	69.1	40.5	73.0	8.4	56.3	22.9	37.6
0135	17.2	60.1	6.2	36.5	16.9	57.2	10.1	42.2	21.2	67.9
0136	5.3	63.4	34.3	47.4	-5.0	52.4	21.4	57.5	17.5	38.7
0137	10.0	56.2	26.1	45.5	27.4	60.4	52.2	41.8	19.7	56.5
0138	24.9	37.0	24.6	47.5	17.6	21 0	3.3	44.1	5,4 -1.9	20,3 57.4
0140	42.5	62.9	19.4	74.2	13.4	46.8	23.2	52.5	26.4	37.2
0141	9.1	35.4	22.0	69.2	32.4	54.8	-5.0	54.0	14.5	53.6
0142	12.6	38.4	21.4	54.7	28,6	49.5	39.2	60.6	26.1	52.9
0143	6.7	61.4	21.5	45.1	19.7	31.6	4.8	24.1	-11.9	47.8
0144	14.0	36.5	16.7	33,0 44.3	35.0	73.8	34.4	71.1	34.3	52.0
0146	20.9	58.5	28.7	40.7	24.4	44.6	28.0	48.0	-5,0	62.3
0147	45.4	74.7	33.0	46.3	21.4	53.4	8.9	45.9	-3.5	40.0
0148	15.6	58.4	32.2	48.8	9.6	48.7	15.3	26,4	3.0	57.5
0149	15.4	31./ 54.2	15.3	41.7	11.5	14.2	14.7 -2.9	32.1	-0.1	47.9
0151	3.1	31.1	9.6	55.2	5.7	50.7	27.8	38.6	9.6	43.1
0152	-5.0	49.0	31.0	61.7	43.5	65.7	6.3	47.8	23.1	71.9
0153	10.0	76.6	28.7	36.0	5.2	31.1	17.5	70.8	35.3	61.6
0154	26.8	56.5	7.2	54.9	17.4	30.1	9.2	19.9	3.4	17.9
0122	33.4	45.A	25.6	70.U 50.1	21.7	54.7	12.2	46.3	32.0	44.1
0157	6.6	70.8	-5.0	46.4	23.9	45.7	20.3	52.5	6.2	35.3
0158	20.3	61.5	8.1	47.5	20.7	41.5	16.6	34.2	6.3	84.1
0159	25.8	47.9	30.3	59.6	20.5	64.6	36.3	55.0	27.8	43.2
0160	20.0	47 4	1/.1	40.1	17.0	30.6 47.5	12.4	97.0 17.0	7.7	37,0 A0.5
0162	10.7	42.4	25.9	42.3	-5.0	54.1	24.7	66.4	23.2	49.9
1161	12.4	34.5	23,5	50.5	25.5	44.1	22.4	45.7	26.1	74.2
9164	39.4	61.1	58.8	45.7	18.3	53.7	20.6	54.1	32.1	67.6
0102	23.4	62.3	20.4	#0.2	19.1	48.7	29,4	33.4	14.7	19.6 52.7
0165	29.8	40.4	10.7	45.4	17.5	44.9	-5.0	41.7	11.5	34.0
0168	3.7	20.4	6.3	47.2	10.4	63.4	1.1	15.5	9.8	46.6
0169	3.6	68.2	0.7	46.1	16.9	43.4	12.6	59.5	3.7	45.9
0170	5.8	49.5	10.8	35.5	16.7	44.6	3,4	34.2	1.0	16.4
0171 0172	5.1 6.2	53.0 33.9	3.8	45.8 44.4	19.5	34.8 40.1	-10.0	60.2 37.2	0.8	19.7
0173	22.3	50.4	23.3	46.6	1.7	54.0	3.0	20.2	11.0	30.3
0174	-1.7	12.3	0.8	33.7	-10.0	30.4	5.0	27.0	0.4	34.0
01/5	12.2	45.2	10.1	24.5	2.4	30.9	16.0	31.7	-0.0	16.9
0176	6.5	19.8	-0.0	53.7	0.9	25.0 21.5	10.8	28.7 21.5	2.2	32.1 46.0
0177 0178	0.1 4.6	44.5 28.3	-4.5 9.3	29.5 41.0	5.4 19.3	44.9	5.2 8.9	33.0	5.4 5.4	24.7
0179	12.3	30.7	-10.0	20.5	15.8	35.7	1.2	27.9	6.6	50.4
0180	21.5	31.8	1.7	46.4	14.3	46.1	3.4	32.2	0.3	37.9
0101	-0.8	24.9	14.0	43.8	10.2	37.5	7.9	36.1	0.4	47.2

TABLE 110. METHODOLOGY DEVELOPMENT TEST PROGRAM GROUP V - RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST, COMPOSITE MISSION, A TYPICAL FIGHTER (CONCL)

	Test M-	90 σ lim	= 20	ksi, M-91	σ_{lim}	= 30 ks	i, M-92	σ_{lim} =	40 ksi	
01#5	13.9	51.4	4.0	25.9	15.2	54.6	1,1	54.2	0.5	64.3
0101	-10.0	60.4	2.5	35.4	13.6	42.3	15.1	27.0	6.1	30.1
0184	11.9	33.9	7.6	58.4	7.3	24.5	11.9	39.4	8.4	54.6
0185	25.4	74.1	-0.5	60.3	21.6	44.7	7.6	43.6	2.5	36.1
0186	20.4	60.9	6.0	34.3	19.3	41.3	27.0	37.	-10.0	24.5
0187	2.0	31.5	0.2	57.5	4.4	41.5	7.9	46.4	5.1	14.0
0188	0.4	37.8	27.0	40.1	6.0	21.9	6.4	28.4	11.2	34.7
0149	9.3	42.2	8.2	40.7	17.5	40.7	0.3	41.1	19.1	49.3
0170	11.9	24.8	12.3	42.9	0.7	8.25	-10.0	45.0	18.3	62.5
0141	2.2	40,2	14.0	34.1	3.2	52.3	4.0	24.4	11.9	48.6
0192	-3.8	34.7	23.2	30.9	Ÿ.5	25.3	10.1	25.0	7.4	21.2
0193	-0.1	31.6	0.9	18.9	1.4	36.4	-0.0	32.5	4.9	35.9
0194	7.1	35.5	2.0	34.9	-10.0	26.4	13.1	36.3	10.8	55.1
0195	34.6	49.6	1.9	28.3	7.3	35.7	8.3	50.6	13.3	57.1
0146	8.3	54.5	14.2	36.6	14.2	39.5	21.6	41.5	10.5	48.9
0147	9.5	41.6	19.7	47.7	11.3	54.6	6.1	51.4	10.7	20.5
0198	3.7	57.1	-10.0	30.4	11.7	41.0	8.3	23.2	0.7	24,9
0199	-0.1	49.3	8.4	24.5	0.5	30.6	12.4	33.0	16.2	40.0
0200	14.4	62.4	3.6	31.9	0.1	49.6	2.2	29.4	0.5	44.6
1050	3.7	46.6	0.2	58.4	9.1	44.5	5.4	25.8	10.5	31.7
U202	-10.0	20.5	8.3	44.4	22,2	34.1	16.6	38,9	9.0	78.4
0507	-0.7	25.1	-2.0	63.6	3.5	62.1	15,4	27.9	12.2	31.0
0204	10.7	40.8	20,9	41.0	11.2	20.5	12.7	23.8	12.2	35.6
0205	2.4	49.4	5.3	46.9	5.4	29.2	7.6	35.1	-10.0	26.7
0200	5.0	49.3	15.3	41.5	5.0	46.0	1.4	43.3	0.5	45.7
0207	5.0	47.8	12.0	26.2	-0.4	18.9	-2.3	31.1	10.4	34.6
9050	5.6	47.6	4.0	70.0	-1.7	35.5	0,2	27,0	16.4	70.0
0204	0.0	34.9	16.4	52.3	9.1	49.6	-10.0	40.3	8.4	30.4
0510	14.7	32.4	17.9	28.0	11.7	23.8	7,1	29,8	-5.0	34.8
1150	15.3	44.5	11.8	35.8	8.2	25.6	6,3	24.5	13.2	28.6
0212	-5.0	24.6	11.5	20.1	5.8	30.0	14.4	24.2	15.3	29.7

TABLE 111. DATA TABULATION FOR TEST M-90

RANDOM SPECTRUM, TYPICAL FIGHTER COMPOSITE MISSION, LIMIT STRESS = 20 KSI 06-W SPECIMEN NO.:

REST FREO= 6.000H2. AINFGRESSIGN) MULT. (DRR. fuef remain periods) 0.305 0.308 0.39849 0.39874 0.423 0.99874 0.99874 0.99874 0.99874 0.99874 0.99875 0.99875 0.99876 0.99775 0.99775 0.99776 0.9	
MULT. CORR. COEFF K-MAX DFLTA K 0.997195 7.78 9.81 0.998499 8.23 10.38 0.998754 8.80 11.57 0.997754 10.17 11.57 0.997754 10.55 11.57 0.997765 11.25 11.85 0.997765 11.80 11.85 0.997765 11.80 11.80 0.997769 11.80 11.56 0.997769 11.80 11.56 0.997769 11.80 11.56 0.997769 11.80 11.777 0.997769 11.80 11.777 0.997769 11.80 11.80 0.997769 11.80 11.80 0.997769 11.80 11.80 0.997769 11.80 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.997769 11.80 0.999769	PHAX=
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0.997195 7.78 9.8i 0.998499 8.23 10.38 0.998491 9.16 11.11 0.998491 9.16 112.19 0.997518 9.66 112.19 0.997654 11.25 112.83 0.997655 11.25 14.89 0.997709 11.25 14.89 0.997709 13.10 16.54 0.997709 13.10 16.54 0.9977107 16.18 52.0 0.9977116 16.18 20.43 0.9997116 16.18 20.43 0.9997116 16.18 22.84 0.999721 19.69 22.60 0.999725 18.00 22.28	RECI
0.998449 8.23 10.38 0.998924 8.80 11.11 0.998491 9.16 11.57 0.997518 9.66 12.19 0.997451 10.97 13.35 0.997465 11.25 14.20 0.997465 11.25 14.89 0.997709 13.10 16.54 0.997709 13.10 16.54 0.9977107 13.61 17.17 0.997709 13.61 17.17 0.997716 16.18 20.43 0.999250 18.70 22.84 0.999545 20.92 26.40 0.999554 22.23 28.06	0.305
0.998924 8.80 11.11 0.998491 9.16 11.57 0.997518 9.66 12.19 0.997851 10.97 12.83 0.997865 11.25 11.80 0.997865 11.80 114.89 0.997865 11.80 114.89 0.997865 11.80 114.89 0.997865 11.80 114.89 0.9978107 113.61 11.17 0.9978107 113.61 11.17 0.9978107 113.61 11.17 0.9978107 113.61 11.17 0.997810 11.38 21.34 0.999250 118.70 23.60 0.999126 20.92 26.40 0.999859 22.23 28.06	0.345
0.998491 9.16 11.57 0.997518 9.66 12.19 0.997807 10.55 13.32 0.997807 10.55 13.32 0.997802 11.80 14.89 0.997655 11.80 14.89 0.997652 12.57 15.61 0.997709 13.61 17.17 0.9977125 14.67 18.52 0.997718 16.18 20.43 0.997818 15.72 19.84 0.997818 15.72 19.84 0.997818 15.72 19.84 0.997818 15.72 19.84 0.997818 15.72 19.84 0.997818 15.72 19.84 0.997818 15.72 19.84 0.999859 11.38 21.93 0.999859 20.92 26.40 0.999859 22.23 28.06	0.385
0.997518 9.66 12.19 0.997554 10.17 12.83 0.997807 10.55 13.32 0.997651 11.25 14.20 0.997665 11.80 14.89 0.997709 113.61 17.17 0.997709 13.61 17.17 0.9977107 14.67 18.52 0.997716 16.18 20.43 0.997818 15.72 19.84 0.997818 15.72 19.84 0.997818 11.38 21.93 0.999250 18.70 23.60 0.999250 18.70 23.60 0.999508 20.92 26.40 0.999508 20.92 26.40 0.999508 20.92 26.40 0.999508 20.92 26.40	0.425
0.997554 13.17 12.83 0.997807 10.55 13.32 0.997465 11.25 14.20 0.997465 11.80 14.89 0.996655 11.80 14.89 0.997709 13.10 16.54 0.9977107 13.61 17.77 0.9977107 13.61 17.77 0.9977107 13.61 17.77 0.9977107 11.80 11.52 0.9977107 11.80 11.30 0.9977107 11.80 21.93 0.999250 118.70 23.60 0.999250 118.70 23.60 0.999554 20.92 26.40 0.999554 22.23 28.06	0.410
0.997807 10.55 13.32 0.997465 11.25 14.20 0.995802 11.80 14.89 0.996655 112.57 15.61 0.997452 12.57 15.61 0.997107 13.61 17.17 0.997107 13.61 17.17 0.997109 14.67 18.52 0.997109 15.72 19.86 0.997109 15.72 19.86 0.997109 15.72 19.86 0.997109 15.72 19.86 0.997109 15.72 19.86 0.99710 18.70 23.60 0.999250 18.70 25.48 0.999559 20.92 26.40 0.999559 22.23 28.06	0.515
0.997451 10.97 13.85 0.994665 11.25 14.20 0.995802 11.80 14.89 0.996655 12.37 15.61 0.997709 13.10 16.54 0.997107 13.61 17.17 0.997149 14.67 18.52 0.997149 14.67 18.52 0.997149 16.72 19.26 0.997169 15.21 19.20 0.997511 16.90 21.34 0.999250 18.70 23.60 0.999250 18.70 23.60 0.999554 20.92 26.40 0.999554 22.23 28.06	
0.994665 11.25 14.20 0.995802 11.80 14.89 0.996655 12.37 15.61 0.997709 13.10 16.54 0.997107 13.61 17.17 0.997149 14.67 18.52 0.997149 15.21 19.20 0.997513 15.21 19.20 0.997513 15.72 19.84 0.99617 16.18 20.43 0.996250 18.70 23.60 0.999231 19.49 24.60 0.999554 20.92 26.40 0.999554 21.59 20.92	
0.995802 11.80 14.89 15.61 0.996655 17.37 15.61 0.997452 12.57 15.61 17.17 0.997709 13.10 14.54 17.17 0.997107 113.61 17.17 14.67 118.52 17.27 19.20 0.997459 15.21 19.20 0.997513 15.72 19.84 0.996082 17.38 22.84 0.999250 18.70 23.60 0.999554 20.92 26.40 0.999554 22.23 28.06	
0.996655 17.37 15.61 0.997452 12.57 15.87 0.997709 13.10 16.54 0.997107 13.61 17.17 0.997149 14.67 18.52 0.997149 15.21 19.20 0.997513 15.72 19.84 0.997513 15.72 19.84 0.9975116 16.18 20.43 0.999250 18.70 23.60 0.999250 18.70 23.60 0.999554 20.92 26.40 0.999554 21.59 28.48	695
0.997452 12.57 15.87 0.997452 0.997709 13.10 16.54 0.997107 13.61 17.17 0.997125 14.58 14.67 18.52 17.77 0.997489 15.72 19.84 0.996781 16.18 20.43 0.999231 19.49 24.60 0.999526 18.70 23.48 0.999526 18.70 23.48 0.999526 0.999528 20.92 26.40 0.999568 22.23 28.06	150
0.997709 13.10 16.54 0.997107 13.61 17.17 0.997125 14.67 18.52 0.997149 14.67 18.52 0.997513 15.72 19.84 0.997513 15.72 19.84 0.999617 16.90 21.93 0.999250 18.70 23.60 0.999251 19.49 24.60 0.999554 20.92 26.40 0.999554 21.59 28.48	
0.99710? 13.61 17.17 0.597125 14.57 18.52 0.997149 14.67 18.52 0.997813 15.72 19.84 0.9977116 16.18 20.43 0.999126 17.38 22.84 0.999231 19.49 24.60 0.999231 19.49 24.60 0.999554 20.92 26.40 0.999558 22.23 28.06	845
0.997125 14.08 17.77 0.997149 14.67 18.52 0.997489 15.21 19.20 0.997513 15.72 19.84 0.997513 16.72 20.43 0.999250 18.09 22.84 0.999250 18.70 23.60 0.99921 19.49 24.60 0.99954 20.92 26.40 0.99954 22.23 28.06	016.
.050 0.997149 14.67 18.52 .123 0.997489 15.21 19.20 .193 0.997513 15.72 19.84 .257 0.997116 16.18 20.43 .257 0.996617 16.90 21.34 .427 0.999662 17.38 21.93 .531 0.999250 18.09 22.84 .618 0.999250 18.70 25.48 .618 0.999231 19.49 26.40 .613 0.99956 20.92 26.40 .639 0.99956 21.59 27.24 .132 0.999458 22.23 28.06	.975
.123 0.997489 15.21 19.20 .193 0.997513 15.72 19.84 .257 0.997116 16.18 20.43 .359 0.996617 16.50 21.34 .427 0.999682 17.38 21.93 .531 0.999250 18.09 22.84 .618 0.999250 18.70 23.60 .618 0.999231 19.49 24.60 .836 0.999231 19.49 25.48 .943 0.99954 20.92 26.40 .039 0.99954 21.59 27.24 .132 0.999458 22.23 28.06	.055
.193 0.997513 15.72 19.84 .257 0.997116 16.18 20.43 .359 0.996617 16.90 21.34 .427 0.999082 17.38 21.93 .531 0.999250 18.09 22.84 .618 0.999250 18.70 23.60 .618 0.999231 19.49 24.60 .836 0.999231 19.49 25.48 .943 0.99954 20.92 26.40 .039 0.99954 21.59 27.24 .132 0.999458 22.23 28.06	011
.257 0.997116 16.18 20.43 .359 0.996617 16.50 21.34 .427 0.999082 17.38 21.93 .531 0.999250 18.09 22.84 .618 0.999250 18.70 23.60 .618 0.999231 19.49 24.60 .836 0.999231 19.49 25.48 .943 0.99954 21.59 27.24 .039 0.999458 22.23 28.06	•
.359 0.996617 16.90 21.34 8 .427 0.999082 17.38 21.93 9 .531 0.949365 18.09 22.84 1 .618 0.999250 18.70 23.60 1 .734 0.999231 19.49 24.60 1 .836 0.99956 20.92 26.40 1 .039 0.99956 21.59 27.24 1 .132 0.999458 22.23 28.06 1	1.255
-427 0.999082 17.38 21.93 9 .531 0.949365 18.09 22.84 1 .618 0.999250 18.70 23.60 1 .734 0.999231 19.49 24.60 1 .836 0.999126 20.19 25.48 1 .943 0.99954 21.59 27.24 1 .039 0.999458 22.23 28.06 1	1.360
.531 0.949365 18.09 22.84 1 .618 0.999250 18.70 23.60 1 .734 0.999231 19.49 24.60 1 .836 0.999126 20.19 25.48 1 .943 0.999608 20.92 26.40 1 .039 0.99954 21.59 27.24 1 .132 0.999458 22.23 28.06 1	1.420
.618 0.999250 18.70 23.60 1 .734 0.999231 19.49 24.60 1 .836 0.999126 20.19 25.48 1 .943 0.999608 20.92 26.40 1 .039 0.99954 21.59 27.24 1 .132 0.999458 22.23 28.06 1	٠
.734 0.999231 19.49 24.60 1 .836 0.999126 20.19 25.48 1 .943 0.999608 20.92 26.40 1 .039 0.99954 21.59 27.24 1 .132 0.999458 22.23 28.06 1	•
.836 0.999126 20.19 25.48 1 .943 0.999608 20.92 26.40 1 .039 0.99954 21.59 27.24 1 .132 0.999458 22.23 28.06 1	•
.943 0.999608 20.92 26.40 1 .039 0.99954 21.59 27.24 1 .132 0.999458 22.23 28.06 I	•
.039 0.999554 21.59 27.24 1	•
.132 0.999458 22.23 28.06 1.689E-0	2.040
	2.135

DATA TABULATION FOR TEST M-90 (CONCL.) TABLE 111.

The state of the s

SPECINEN NO.	* MO *	06W	RANDON SPECTRUM,	TYPICAL FIGHTER C	AANDON SPECTRUM, TYPICAL FIGHTER COMPOSITE MISSION, LIMIT STRESS = 20 KSI	TRESS = 20 K	15	
CCT SP	SPECIMEN	*	B= 0.250 IN.	W= 6.000 IN.	AN= 0.0 IN.			
1			PMAX.		TEST FREO & 6.000HZ	.000HZ.		
EW IROWENT		CONDITIONS	II AMBIENT AIR					
Ş	_	CYCLES	A (MEA SURE D)	AIR EGRESSION)	MULT. CORR. COEFF	K-MAX	DEI TA K	76/10
2	=	199493.	2.225	2.223	0.998575	22.87	28.87	1.891F-05
2	⊼ }	201859.		2.312	0.999333	23.51	79.67	2-0611-05
	⋜	204342.	2.415	2.417	0.999649	24.27	30.64	2.313F-05
32	₹ ?	206624.		2.528	0.999626	25.13	31.68	2.555E-05
£	~	58293.	•	2.617	0.998680	25.77	32.52	2.453F-05
1	~	210233.	~	2.125	0.998561	26.64	33.63	3-215F-05
SR	~	11948.	•	2.838	0.998495	27.52	34.73	3.805F-05
# :	N	213598.	•	2.972	0.997011	28.63	36.14	4-808F-05
3	~	214531.		3.060	0.997454	29.60	37.11	5.931F-05
3	~	215428.	-	3.172	0.997893	30.43	38.37	7.299E-05
6	~	215979.	~	3.249	0.999897	31.13	39.29	8.383F-05
3 :	Ñ	216555.		3.353	0.996535	32.14	40.50	1-027F-04
7	~	21 6980.		3.440	0.994172	33.32	41.07	1-2465-04
42	~	217477.		3.579	0.956589	34.51	43.55	2.001F-04
43	~	217700.		3.655	0.955049	35.41	44.70	3-023F-04
\$	~	217982.		3.854	0.965366	37.83	47.71	4. 735F-04
*	~	218068.	3.945	3.930	0.973865	38.81	48.98	6-892F-04
;	N	16151.	090.	4.064	0.987464	11.05	51.39	1.064F-03

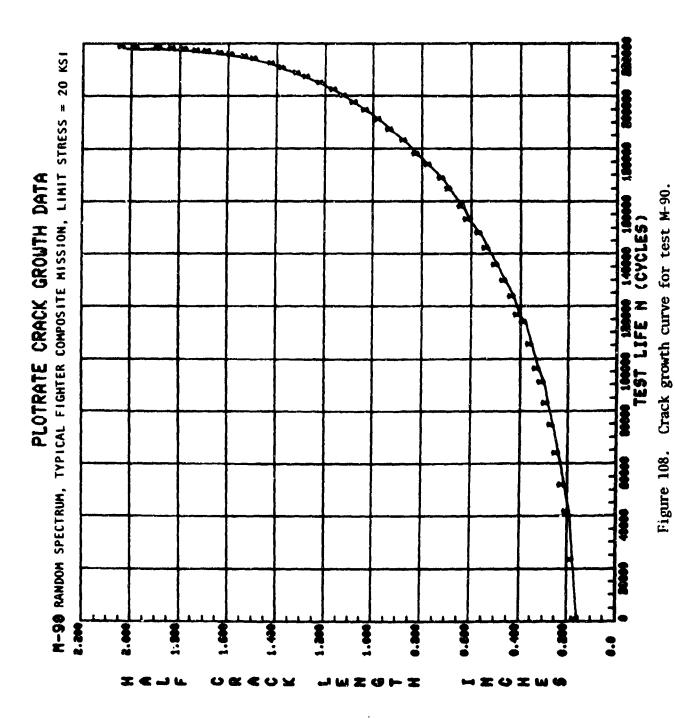


TABLE 112. DATA TABULATION FOR TEST M-91

RANDOM SPECTRUM, TYPICAL FIGHTER COMPOSITE MISSION, LIMIT STRESS = 30 KS1 SPECIMEN NO.: M-91

ANE O.C IN. 4= 6.000 IN. 8= 6.256 JN. PHAXE CCT SPECIMEN

ENVIRONMENT CONDITION: ANDIENT AIR

		The state of the s					
\$	CYCLES	A (MEASURID)	AIREGRESSION	MULT. CORR. CUEFF	X-MAX	DELIA K	44/44
	ė	0.300	0-300	107665-0	94,-11		A 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
N	1997	356-3	8 7 E - 13	250573	17 77	76.91	207120
er!	14667.	0.74.0	350			71:01	30-3606-6
•				1961669	03-61	10.63	4.038E-16
•		014.0	0.454	6.498263	14.33	13.00	6.061 [-06
ĸ:	763Q4·	0.530	6.531	0.998896	15.44	19.48	1-2455-06
•	30212	0.555	0.551	0.899031	16.31	79.57	8-1655-06
~	23612.	0.655	0.653	6,999785	17.15	21.66	A(-1500.2
•	38941.	0.756	6.753	7758567	19.47	73.30	1 .451 5-05
•	42146.	0.230	0-820	X7E 95% O	C	24.25	2012000
10	44881.	0.880	0.850 0.850	3 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20.00	07 96	CO-3777-1
:	44642	4 4 4 6		777440	51.07	75.67	1.5905-0
- (-71001		0.943	イクとのかか・ロ	50.78	77.97	1.5776-65
21	48773.	1.010	1.006	0.99690	21.50	27.13	1-7534-05
13	51086.	1.085	1.053	0.999021	22.49	28.57	2.065E-US
<u>*</u>	.225%	1.160	1.155	0.559154	23.11	29.23	2-1435-05
4 5	54191.	1.225	1.226	6.94675	23.34	30.20	2-3715-15
16	55656.	3.36	1.299	4.3864°0	24.32	31.15	2.5 Jat -05
11	56764.	1.350	1.356	354855°0	25.32	31.5	2-871F-05
=	57368.	1.3%5	1.391	C. 2569E5	25.69	32.42	3-1825-05
<u>•</u>	58368.	1.450	1.456	0.997918	26.37	33.26	3-5410-05
0 2	5914.	1.510	1.513	6.447445	26.96	34.02	4 .020E-05
71	55416.	1.545	1.533	0.996534	11.17	34.27	4-143t-65
22	60817.	1.655	1-661	0.996158	58.48	35.93	5-337c-05
23	61616.	1,756	1-746	5c4849.0	29.36	37.04	6-3405-05
24	62452.	1.255	1.860	6.997325	30.53	36.51	d.090£-6
52	63089.	1.960	1.966	0.596145	51.61	39.88	9-414E-05
9 .	63662.	2.030	2.078	0.996565	32.78	41.35	1-1145-14
27	64133.	2.205	2.169	0.955446	33.94	42.62	1-4076-14
58	64565.	2°%	2.337	0.97759	35.35	44.56	1-2531-04

TABLE 112. DATA TABULATION FOR TEST M-91 (CONCL)

				16/7d	2-366-0	2.3616-04	2-3106-0	2.346-44	3.299E-04
- 30 KS i				DELTA K	46.95	47.52	48.20	\$1.16	52.15
LIMIT STRESS		5-000HZ-				37.44		\$0.0¥	41.34
RANDOM SPECTRUM, JYPICAL FIGHTER COMPOSITE MISSION, LIMIT STRESS - 30 KSI	AN= 0.0 3N.	TEST FREG# 6.000MZ.		MULT. CORR. COEFF	0.575210	0.980642	0.979273	0.976345	0.985645
CTRUM, JYPICAL FIG	WE 6.000 IN.			A (RE GRESSION)	2.490	2.530	2.578	2.777	2.843
RANDON SPE	k= 6.250 IN.	PMAX=	AMBIENT AIR	A (MEASURID)	2.435	2.556	2-625	2.735	2-845
			COMDITION:	CYCLES	6.5000.	65097.	65173.	65479.	65627.
SPECIMEN NO.: N-91	CCT SPECINEN	PAINE	ENVIRONMENT CONDITION:	NO.	5.6	30	31	32	£6.

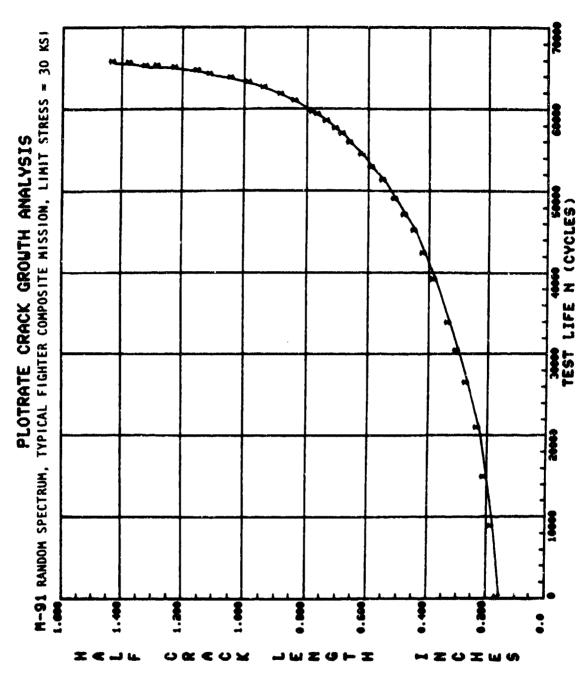


Figure 109. Crack growth curve for test M-91.

DATA TABULATION FOR TEST M-92 TABLE 113.

SPEC	# # # # # # # # # # # # # # # # # # #	M-92	RANDOM SPECTRUM,	SPECIMEN NG.: M-92 RANDOM SPECTRUM, TYPICAL FIGHTER COMPOSITE MISSION, LIMIT SIRESS = 40 RSI	ISTE MISSION,	LIMIT STRESS = 40 KST
133	CCT SPECIMEN		B = 0.250 IN.	h = 6.000 lh.	AN = 0.0 IN.	Z
PHEN .			PHAX =		TEST	TEST FRE0 = 6.00 HZ.
ENV I A	ONNENT CO	SNOLT TON:	ENVIRONMENT CONDITION: AMBIENT AIR			

CYCL ES	O) AIRE	MUL T.	K-MAX 15.42	DELTA K 19.45	04/DN 5.831E-06
0.360	0.362	0.999393	16.95	21.38	9.432E-06
0.445	0.447	0.999554	18.86	23.79	1.2736-09
0.480	0.479	0.999436	19.53	24.64	1.390E-05
0.530	0.528	0.999498	20.52	55.89	1.570E-05
0.580	0.582	0.992164	21.56	27.20	2.020E-05
0.615	0.619	0.992699	22-25	28.06	2-153E-05
0.660	599*0	0.985360	23.15	29.21	2.680E-05
0.725	0.714	0.985110	23.94	30.21	2.867E-05
0.765	0.785	0.982067	25.16	31.74	3-4275-05
0.815	0.757	0.981602	25.36	31.99	3.614E-05
0.870	0.884	0.985312	26.77	33.77	4.534E-05
0.915	0.907	0.985044	27.14	34.23	4.698E-05
0.975	0.973	0.993635	28.17	35.54	5.622E-05
1.015	1.013	0.993987	28.78	36.30	6.142F-09
7.060	1.067	0.998459	29.60	37.34	6.956F-05
1.110	1.107	0.997491	30.19	38.08	7.305E-05
1.155	1.154	0.992929	30.87	38.94	3.427E-05
1.210	1.207	0.985605	31.64	39.92	1.028E-04
1.260	1.281	0.987375	32.70	41.26	1.2016-04
1.320	1.317	0.987021	33.22	41.90	1.305E-04
1.365	1.344	0.986520	33.60	42.39	1.385E-04
1.410	1.420	0.990810	34.66	43.73	1.627E-04
1.455	1.436	0.917912	34.89	44.01	2.139E-04
1.510	1.497	0.938292	35.72	45.07	3.157E-04
1.635	1.750	0.946027	39.20	94.64	5.282E-04
1.915	1.857	0.955927	40.66	51.29	5.629E-04

TABLE 113. DATA TABULATION FOR TEST M-92 (CONCL.)

SPECIMEN NO.: N-92	.: H-92	RAMBOM SPECTRU	H, TYP. FIGHTER COME	PANDON SPECTRUM, TYP. FIGHTER COMPOSITE MISSION, LIMIT STRESS = 40 KS!	55 = 40 KSP	
CCT SPECIMEN		0.250 IN.	* * 6. COD IN.	AN = 0.0 IN.		
- 2124		PHAX		TEST FRED * 6.00 HZ.	6.00 HZ.	
ENVIRONNENT CONDITION:	CONDITIONS	AMBIENT AIR				
3881	CYCLES 21897. 22043. 22182.	A(MEASURED) 2.035 2.110 2.325	A(REGRESSIGN) 1.946 2.194 2.323	MULI. CORR. COEFF 0.953953 0.967804 0.982004	K-MAX DELTA K 41.88 52.84 6. 45.33 57.19 5. 47.17 59.51 7.	041 6.041 5.588 7.398

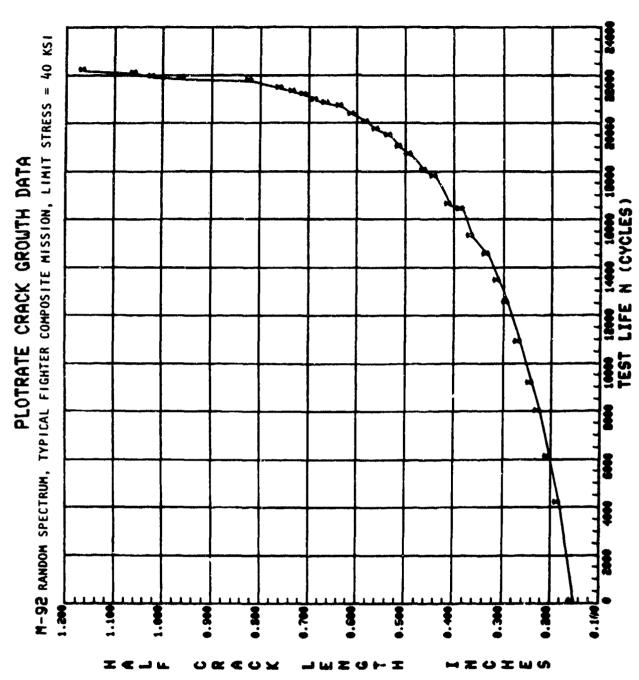


Figure 110. Crack growth curve for test M-92.

j

Line				St	resses	in KSI				
001	0.0	-6.4	10.8	10.7	10.9	10.6	10.8	10.3	12.5	8.4
	1207	V.8	1103	10.3	11-1	10.7	10.8	10.7	10.5	10.8
	10.6	10.7	11.5	9.3	12.2	10.2	10.9	10.5	11.4	10.5
	111.5	10.7	11.5	10.3	-11.5	9.9	11.2	10,7	11.0	10.0
	10.9	10.7	10.9	10.4	11.3	10.5	10.9	10.5	11.3	10.4
	11.0	10.1	12.5	8.6	12.3	10.1	11.0	10.8	10.6	10.6
	111.0	10.7	10.8	10.8	11.0	10.5	1101	10.6	10.8	10.7
	11.3	10.0	11.2	10.6	11.3	9.8	11.7	9.9	11.9	10.1
010	10.8	10.8	11.0	10.2	11.5	10.3	11.1	10.8	10.8	10.8
	10.8	10.8	10.8	10.4	12.2	9.2	71.6	10.7	10.8	10:7
	11.0	10.6	11.0	10.7	10.8	10.8	10.9	10.7	10.8	10.7
	11.4	9.2	12.2	10.3	10.9	10.6	11.1	10-4	11.5	9.1
	3.8	9.0	9.1	9.0	9.2	9.1	9.1	8.7	10.7	6.8
	10.8	8.2	9.6	8.7	9.4	9.0	9 • 1	9.0	9.1	9.0
	201	9.0	9.4	7.7	10.4	8.5	9.2	8.9	9.6	8.8
	10.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	7.2
	9.0	8.4 9.0	9.3 9.2	8.7 8.0	9•2 10•0	8.9 8.6	9.0	8.9	9.4	8.9
	9.4	8.2	9,4	8.8	9.4	8.4	9.2	9.0	9.1	8.5
020	9.4	9.0	9.0	9.0	9.1	9.0	9.0	9.0	9.0	9.0
	11.4	10.6	10.6	10.5	10.7	10.6	10.6	10.2	12.3	8.3
	112.5	9.7	11.2	10.2	0.9	10.5	10.7	10.6	10.7	10.6
	10.6	10.6	11.0	9.2	12.0	10.0	10.7	10.4	11.2	10-4
	11.3	9.5	11.3	10.2	11.3	9.7	11.0	10.6	10.8	9.8
	11.5	10.5	10.0	10.8	10.9	10.5	10.7	10.6	10.6	10.8
	10.7	10.6	10.7	10.3	11.1	10.4	10.7	10.4	11.1	10.2
	10.9	9.9	12.3	6.5	12.1	10.0	10.8	10.6	10.6	10.5
030	10.4	10.6	10.6	10.8	10.0	10.3	10.9	10.9	10.6	10.5
	111-1	9.8	11.0	10.4	11-1	9.7	11.5	9.8	11.7,	-6.4
	12.9	9.1	11.5	10.6	10.8	10.7	10.0	10.4	10.9	10.7
	111.2	10.7	10.8	10.7	11.3	10.1	11.2	10.6	10.9	10.7
	111.2	10.2	11.2	10.5	11.0	10.6	11.3	9.4	12.7	9.1
	111.5	10.5	-ii.	10.6	- 	10.6	10.9	10.7	10.6	T0.6
	liiii	10.7	10.8	10.7	11.4	10.1	11.0	10.8	12.1	9.5
	111.6	10.2	11.6	9.9	11.4	9.8	12.1	10.1	10.0	10.8
	11.00		1216	0.5	1803	1011	1118	1044	1102	1014
	111-1	10.5	11-1	10.5	11.0	10.7	10.8	10.4	11.0	10-1
040	11.0	7.7	11.1	10.7	10.9	10.6	11.5	•••	11.7	9.3
	11.0	10.6	1100	10.5	1101-	10.5	11.0	10.0	10.6	-10.7
	11.0	10.5	11.0	10.6	11.1	10.2	11.4	10.4	10.9	10.5
	10.8	10.6	11.2	10.3	11.2	10.5	10.9	10.8	10.0	10.6

Line					Stresse	s in KS	I			
	9.7	0.0	9.7	8.7	9.7	0.3	9.5	9.0	9.3	8.3
	9.6	4.0	9.0	9.0	9.3	9.0	9.1	9.0	9.1	9.0
	9-1	9.0 9.0	9.2 9.1	8 · 8	9.5 9.3	8.8 8.9	9.2	8.9 8.9	9.5 9.3	8.7
	7.1	7.0	10.2	7.3	10.0	8.6	4.1	9.0		8.9
	9.1	9.0	9.0	9.0	9.1	0.0	9.2	8.9	9.0	9.0
050	9.3	8.5	9.2	8.9	9.3	8.4	9.6	8.5	9.7	8.4
	9.0	9.0	9.1	8.6	9.4	5.7	9.1	9.0	9.0	9.0
	10.7	10.6	10.8	10.0	11.3	10.1	10.9	10.6	10.6	10.6
	10.7	10.6	10.6	10.3	12.0	9.1	11.4	10.5	10.6	10.6
	10.8	10.4	10.8	10.6	10.6	10.6	10.7	10.5	10.6	10.6
	11.2	9.1	12.0	10.2	10.7	10.4	11.0	10.3	11.3	9.0
	12.7	9.0	11.3	10.4	10.7	10.6	10.7	10.6	10.6	10.6
	111.0	9.4	10.6	9.5	11.0	10.0	11.0	10.4	10.8	10.1
	11.0	10.5 10.1	11.0	10.5	11.1	10.4	11.1	9.3	12.5	9.0
	+11.3	10.3	10.6	-10.5	10.8	10:5		10.6	10.7-	-6.4
060	11.3	10.3	11.0	10.5	10.8	10.7	10.9	10.7	10.8	10.4
	11.8	9.0	11.3	10.7	10.9	10.5	11.6	9.2	12.4	10.1
	1110	10.8	1102	10.6	10.0	1017	1167	9.4	11.3	101
	12.0	10.3	10.9	10.6	11.4	10.2	11.0	10.7	11.0	10.4
	11.0	10.7	10.9	10.7	11.0	10.6	10.9	19.6	10.9	10.7
	111.0	10.3	11.6	10.0	1191	10.6	11.0	10.5	10.9	10.7
	10.9	10.7	10.9	10.5	11.6	9.9	11.0	10.9	11.0	9.9
	11.6	10.6	10.9	10.3	11.4	10.6	11.3	10.3	11.2	10.5
	10.8	10.8	10.8	10.7	10.00	10.8	10.9	10.1	11.8	10.0
070	11.0	10.6	11.6	9.5	11.8	1C.5	10.8	10.7	11.2	10.3
	11.1	10.7	10.5	10.8	10.9	10.5	11.2	10.3	10.9	10.7
	12.7	10.5 9.1	11.6	10.8	12.2	9.2	11.5	10.8	10.9	9.5
	9.3	8.4	10.7	7.0	10.5	8.5	9.2	9.1	9.1	8.9
	9.3	9.0	9.1	9.1	9.3	5.5	7.4	8.9	9.1	9.0
	9.6	8.3	9.4	8.9	9.5	8.2	9.9	8.3	10.1	8.5
	9.0	9.0	9.0	8.8	9.9	7.9	9.5	9.0	9.0	9.0
		8.9	9.1	9.0	9.0	9.0	9.0	9.0	9.0-	9.0
	9.3	7.9	10.0	8.7	9.0	8.9	9.2	8.8	9.4	7.8
080	10.6	7.8	9.4	8.9	9.0	9.0	9.0	9.0	9.0	9.0
	4.5	8.2	10.1	0.2	4.5	9.9	4.5	8.8	9.1	867
	10.9	10.5	10.6	10.6	11.2	10.0	10.8	10.0	11.9	9.3
	11.4	10.0	11.4	9.8	11.3	9.6	11.9	10.0	10.6	10.6
	177.8	7.6	12.5	8.4	15-1	10.0	11.0	S		10.2
	10.0	10.3	10.9	10.3	10.8	10.5	10.6	10.6	10.8	10.0
	11.6	9.8	11.0	10.5	10.7	10.4	11.3	9.8	11.5	9.2

Test M-93: This table as shown

Line	Stresses in KSI												
****	11.7	10.4	10.8	10.4	10.9	10.3	10.6	10.6	10.6	10.5			
	10.9	10.4	10.6	10.5	10.9	10.1	11.2	10.5	1007	10.6			
	10.7	10.4	11.0	10.1	11 • 1	10.3	10.8	10.6	10.6	10.5			
090	11-1	10.2	10.8	10.6	10.6	10.5	10.8	10.6	10.7	-8.9			
	7.2	6.5	6.6	6.5	6.6	6.6	6.6	6.2	7.8	4.5			
	7.9	5.9	7.0	6.2	6 • 8	6.5	6.6	6.5	6.6 7.0	6 · 5			
	6.6	6.5	6.9	5.5	7.6	6.1	6.7	6+4	5.7	5.5			
	1.01	5.7	701	6.2	7.1	5.9	6.6	6.5	6.6	6.5			
	7.0	6.5	6.5	6.5	6• 6 6•9	6.5	6.6	6.4	6.9	6.3			
	6.6	6.5	6.7	6.3		5.1	6.7	6.6	6.6	6.4			
	8.8	6.0	7.6	5.0	7.6 6.7	6.3	6.8	6.4	6.6	6.5			
	6.8	6.5	6.6	6.5	6.2	6.2	6.2	5.9	7.2	4.1			
	6.7	6 • 1	6.2	5.9		5.1	8.2 -	6.1	6.2	6.1			
100	7.4	5.5 8.9	9.0	9.0	9.3	8.6	9.2	8.9	9.0	9.0			
	9.2	8.7	9.2	8.9	9.1	8.9	9.3	8.1	10.4	7.6			
	9.4		9.1	8.9	9.1-	8.9	9.0 -	9.0	9.0 -	- 6.9			
		9.0	9.0	9.0	9.3	8.6	9.1	8.6	9.9	6.1			
	9.1	8.7	9.5	8.4	9.4	8.4	9.9	8.6	9.0	9.0			
	9.1	6. 3	10.4	7,3	10.0	0.0	9.2	5.6	9.3	818			
	9.2	8.9	9.2	8.8	9.1	9.0	9.0	٥.0	9.1	8.6			
	4.6	8.5	9.2	9.0	9.0	8.9	9.4	8.5	9.6	8.0			
	9.7	8.9	9.1	8.9	9.2	8.8	4.1	9.0-	9.0-	9.0			
110	9.3	8.6	8.7	8.6	8.7	8.6	8.7	8.3	10.1	6 - 5			
110	10.4	7.8	9.1	8.3	8.9	8.5	8.7	8.6	8.7	8.6			
	8.7	0.8	8.9	7.4	10.0	8.1	8.7	8.5	9.5	6.			
	9.3	7.6	9.2	8.3	9.3	7.8	9.0	8.6	8.8	-8.9			
	7.0	5.9	6.9	6.4	6.9	5.8	7.3	5.9	7.4	6.0			
	3.6	6.6	6.7	6 -1	7.1	6.2	6.8	6.5	6.5	6.5			
	6.6	6.6	6.6	6.3	7.6	5.4	7.2	6.5	6.6	6 . 5			
	6.7	6.4	6.7	6.5	6.6	6.6	6.6	6.5	6.6	6 . 5			
	7.0	5.4	7.6	6.2	6.7	6.4	5.8	6.3	7.1	30.			
	8.1	5.3	7.1	6.4	6-6	6.5	6.6	6.6	6.6	6 • 5			
120	6.9	5.7	7.7	5.7	6.9	6.4	6.8	6.3	6.7	6.1			
	8.9-	6.5	6.6	6.5	6.9	6.1	6.9	6.4	6.6	6.9			
	6.2	6.1	6.4	5.2	7.2	5.7	6.2	6.0	6.6	5.9			
	6.7	5.4	6 • 6	5.9	6.7	5.5	6 • 4	6+1	6.4	5.0			
	941	8.9		8.9	4.5	8.7	913	818					
	9.0	8.9	9.2	8.7	9.3	8.8	9+1	9.0	9.0	A • 9			
	9.3	8.7	9.1	9.0	9.0	9.0	9.1	9.0	9.0	8.6			
	9.7	E.4	9.3	8.9	9.0	8.9	9.5	7 .9	T0.1	e.			
	9.1	8.9	9.2	8.9	9.0	9.0	9.6	9.0	9.3	0.6			
	9.8	8.7	9.0	8.9	9.4	8.6	9 • 1	9.0	9.1	8.6			

Test M-93: This table as shown

Line		Stresses in KSI											
130	9,1	8.9	9.0	9.0	9.1	8.9	9.0	8,9	9.1	9.0			
	401	8.7	3.9	8.5	4.8	8.9		6:8	- 4:1	9.0			
	9.0	9.0	9.0	8.9	9.5	8.4	9.1	9.1	9.1	8.4			
	9.2	8.6	8.6	8.6	6.8	8.6	8.7	8.6	8.7	0.4			
	8.9	7.9	8.8	8.5	9.0	5.5	8.7	8.4	9.0	8.4			
	0.0	0.6	10.3	6+8	9+8	9.2	8.8	8.6	8.7	8 • 6			
	111.6	10.7	10.8	10.7	8.8	8.4	8.9	8.5	8.7	-6.4			
	12.7	9.6	11.3	10.7	10.9	10.8	10.8	10.2	15.2	8.4			
	10.8	10.7	11.2	9.3	11.1	10.7	10.8	10.7	10.8	10.8			
140	111.5		11:5			10.2	10.9	10.5	11.4	10.5			
140	11.4	10.7	10.7	10.7	11.1	10.7	10.8	10.7	11.0-	10.0			
	10.9	10.7	10.9	10.4	11.3	10.5	10.9	10.7 10.5	10.8	10.7			
	11.0	10.1	12.5	8.6	16.3	10.1	11.0	10.8	11.3	10.4			
	11.0	10.7	10.8	10.8	11.0	10.5	11.1	10.6	10.8	10.6			
	11.3	10.0	11.2	10.6	11.3	9.8	11.7	9.9	11.9	10.7			
	17.8	10.8	11.0	10.2	11.5	10.3-	ii.i-	10.A	10.8	10.1			
	17.8	10.8	10.8	10.4	12.2	9.2	11.6	10.7	10.8	10.5			
	11.0	10.6	11.0	10.7	10.8	10.8	10.9	10.7	10.8	10.7			
	11.4	9.5	12.2	10.3	10.9	10.6	1101	10.4	11.5	90.7			
150	7.8	9.0	9.1	9.0	9.2	9.1	9.1	8.7	10.7	6.8			
	10.8	8.2	9.6	8.7	9.4	9.0	9 . t	9.0	9.1	9.0			
	9.1	9.0	9,4	7.7	10.4	8.5	9.2	8.9	9.6	8.6			
	9.5	9.0	9.0	9.0	9.0	9.0	9.0	8.8	10.2	7.2			
	10.4	8.4	9+3	8.7	9,2	8.9	9.0	9.0	9.0	9.0			
	9.0	9.0	4.5	8.0	10.0	0.0	9.0	8.9	7.4	8.9			
	9.4	8.2	9.4	8.8	9.4	8.4	9.2	9.0	9.1	8.5			
	11:4	9.0	9.0	9.0	9+1	9.0	9.0	9.0	9.0	9.0			
	12.5	9.7	10.6	10.5	1.0.7	10.6	10.6	10.5	72.3	8.3			
60	10.6	10.6	11.2	10.2	10.9	10.5	10.7	10.6	10.7	10.6			
-00	11.3	9.5	11.5	9.2	12.0	10.0	10.7	10.4	11.2	10.4			
	11.2	10.5	10.6	10.2	11.3	9.7	11.0	10.6	10.8	9.8			
	10.7	10.6	10.7	10.3	10.9	10.5	10.7	10.6	10.6	10.6			
	10.9	₩.9	12.3			10.4	10.7	10.4	11.1	10.5			
	10.9	10.6	10.6	10.6	10.9	10.0	10.9	10.6	_10.6	10.5-			
i	11.1	9.8	11.0	10.4	11.1	9.7	11.5	10.5	10.6	10.5			
	12.9	9.1	1105	10.6	10.8	1017	1018	9.8	11.7	-6.4			
- 1	11.2	9.6	12.4	9.6	11.2	10.6	11.1	10.4	1018	1007			
	11.2	10.7	10.8	10.7	11.3	10.1	11.2	10.4	10.9	10-2			
70	TT.2	T0.2	11.5	10.5	-11.0	10.6	11.3	9 .4	10.9 -12.7	10.7			
′	11.5	10.5	11.0	10.6	11.0	10.6	10.9	10.7	10.8	10.6			
l	11.1	10.7	10.8	10.7	11.4	10.1	11.0	10.2	12.1	9.5			

TABLE 114. METHODOLOGY DEVELOPMENT TEST PROGRAM, GROUP V, RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST COMPOSITE MISSION, TYPICAL TRANSPORT (CONT)

Test M-93: This table as shown

Line	Stresses in KSI												
	11.6	10.2	11.6	9.9	11.4	4.8	12-1	10-1	10.8	10.5			
	11100	V.B	12.6	6.5	75.2	10.1	11.2	10.4	11.5	10.4			
	111.1	10.5	11.1	10.5	11.0	10.7	10.8	10.8	11.0	9.3			
	11.6	9.9	11.1	10.7	10.9	10.6	11.5	9.9	11.7				
	11.9	10.6	11.0	10.5	11.1	10.5	11.0	10.8	10.0	70.7			
	11.0	10.5	11.0	10.6	11-1	10.2	11.4	10.4	10.9	10.6			
	10.8	10.6	11.2	10.3	11.2	10.5	10.9	10.8	10.8	10.0			
180	9.7	8.0	9.7	8.7	9.7	8.3	9.5	9.0	9.3	9.0			
100	9.0	9.0	9.0	9.0	9.3	9.0	9.1	9.0	9.1				
	9-1	9.0	9.2	8.8	9.5	6.6	9.2	8.9	9.5	8•1			
	9.0	9.0	9.1	8.0	9.3	8.9	9.0	8.9	9.3				
	9.1	6.6	10.2	7.3	10.0	8.6	9 - 1	9.0	9.0	8.9			
	9.1	9.0	9.0	9.0	9+1	8.8	9.2	8.9	9.0	9.0			
	7.3	8.7	4.5	8.9	9.3	5.4	9.6	8.5	9.7	9.0			
	9.0	9.0	9 • 1	8.6	9•4	8.7	9.1	9.0	9.0				
	10.7	10.6	10.6	10.0	11.3	10.1	10.9	10.5	10.6	10.6			
	10.7	10.6	10.6	70.3	12.0	9.1	<u></u> 1 • •	10.5	70.6				
190	10.8	10.4	10.8	10.6	10.6	10.6	10.7	10.5	10.6	10.0			
1,50	111.2	P • 1	12.0	10.2	10.7	10.4	11.0	10.3	11.3	10.			
	12.7	9.0	11.3	10.4	10.7	10.6	10.7	10.5	10.5	10.			
	11.0	9.4	12.2	9.5	11.0	10.4	11.0	10.3	10.5	19.			
	11.0	10.5	10.6	10.5	11-1	10.0	11.0	10.4	10.7	9.			
	111.0	10.1	11.0	10.4	10.8	10.4	11.1	9.3	Y2'-5	-6.			
	11.3	10.3	10.8	10.5	10.8	10.5	10.7	10.6	10.7	10.			
	11.3	10.3	11.0	10.8	10.8	10.7	10.9	10.7	10.8	10.			
	11.0	7.8	11.3	10.7	10.4	10.5	11.6	9.2	15.4	10.			
	11.0	10.6	11.2	10.6	10.8	10.7	11.7	9.4	11.3	10.			
200	12.0	10.3	10.9	10.6	11.4	10.2	11.0	10.7		10.			
	11.0	10.7	10.9	10.7	11.0	10.6	10.9	10.5	10-4	10.			
	11.0	10.3	11.6	10.0	11-1	10.6	11.0	10.5	10.9	9.			
	10.9	10.7	10.9	10.5	11.6	9.9	11.0	10.9	11.0	10.			
	11.6	10.6	10.9	10.3	11.4	10.6	11.3	10.3	11.2	10.			
	10.8	10.8	10.8	10.7	10.6	10.8	10.9	10+1	11.2	10.			
	11.0	10.6	11.6	9.5	11+6	10.5	10.8	10.7		-10:			
	1101	10.7	10.8	10.5	10.9	10.5	11.2	10.8	10.4	9.			
	11.1	10.5	10.8	10.6	10.5	10.6	10.6	10,6	10.5	9.			
	18.7	9.1	11.6	10.1	12.2	9.8	11.5						
210	963			7.0	10/2 -	8.8	9.4	8.9	9.1	9.			
-10	9.3	••0	9•1	9,1	9•3 9•5	8.2	9.4	8.3	10.1	8.			
	9.6	8.3	9.4	8.9						*.			
					9.0	9.0	9.0	9.0	9.0	9.			
	9-1	6.9	9-1	9.0 8.7	9.0	8.9	9.2	8.8	9.4	7.			
	9.3	7.9	10.0	5 . /	707								

TABLE 114. METHODOLOGY DEVELOPMENT TEST PROGRAM, GROUP V, RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST COMPOSITE MISSION, TYPICAL TRANSPORT (CONT)

Line	Stresses in KSI												
	10.6	7.8	9,4	8.9	9.0	9.0	9.0	9.0	9.0	9.0			
	10.9	10.5	10.6	8 -2	9.5	8.4	4:5	No.H	4.1				
	11.4	10.0	11.4	10.6	11.2	10.C	10.8	10.0	11.9	9.3			
220	10.0	7.6	18.7	710	11+3	9.6	11.9	10.0	10.6	10.4			
220	10.9	10.3	10.9	10.3	10.8	10.5	10.6	10.2	11.1	10.1			
	11-6	9-8	11.0	10.5	10.7	10.4	11.3	9.6	10.6 11.5	10.5			
	1167	1000	1018	:0.4	10.4	1013	10.8	1016	10.6	1035			
	10.9	10.4	10.8	10.5	10.9	10.1	11.2	10.2	10.7	10.6			
	10.7	10.4	11.0	10.1	11.1	10.3	10.5	10.6	10.6	10.5			
	1101	10.2	10.8	10.0		10.5	to-a	10.6	70.7				
	13.1	10.2	10.8	10.6	10.6	10.5	10.8	10-6	10.7	-4.9			
	7.2	6.5	6.6	6 • 5	6.6	5.6	6.6	6.2	7.8	4.9			
	1.0	26.9	780	0.5	0.0	612	0.0	6.7	0.0	0.5			
230	6.6	6.5	6.9	5.5	7.6	6.1	6.7	6.4	7.0	6.3			
_	7.1	5.7	7+1	6.2	741	5.9	ć • 9	6.5	6.7	5.9			
	7.3	5.5	6.5	6.5	5.5	6.5	6.6	6.5	6.6				
	6.6	\$.5	6.7	6.3	6.9	6.4	6.5	6.4	6.9	6.3			
	4.8	6.0	7.8	5.0	7.6	6.1	6.7	6.6	6.6	6.4			
	6.7	6-1	9.5	8.8	647	0.0	3.6	0.4	010	0.5			
	724	5.5	6.5	5•1 5•9	6.5	6.2	6.2	5.9	7.2	4.7			
	¥.2	- 5.7 - 7.9		3.7	6.4	6.1	8.8	6+1	6.2	6.1			
	9.2	8.7	9.2	0.9	9.3	8.9	9.2		9.0	910			
240	4.4	0.8	9.1	6.9	9.1	8.9	9.0	5.1 9.0	10.4	7.6			
	901			940		316	- 911-	9.0	9.0	8.9			
	9.5	8.7	9.5	8.4	9.4	8.4	9.9	8.6	9.0	9.0			
	9.1	8.3	10-4	7.3	10.0	8.6	9.2	6.6	9.3				
	7.2	8.9	7.2		9.1	9:0-	9.0						
	9.6	8.5	9.2	9.0	9.0	8.9	9.4	8.5	9.6	8.0			
	4.7	8.9	9.1	4.9	9.2	8.8	9 • 1	9.0	9.0	9.0			
	A'3	9.5	8.7	8.0	8.7		0.7	0.3	10.1	6.5			
i	13.4	7.8	9.1	8.3	8.9	8.5	8.7	8.6	8.7				
	8.7	8.6	3.9	7.4	10.0	0 - 1	8.7	8.5	9.2	8.4			
250	4.5	7.5	9.Z	8.5	7.3	7.6		8.6	8.5	-0.9			
Ĭ,	7.0	5.9	6.9	6.4	6.9	5 - 8	7,3	5.9	7.4	4.0			
	4.6	••6	647	6-1	7 • 1	6.2	6.5	4.5	6.5	4.5			
1	6.7	9 · 6	6.6	6.3	746	3.4	7.62	913	6.6	915			
	7.0	5.4	6.7	6.5	6.6	6.6	6.46	4.5	6.6	4.5			
	6.1	5.3	7.6	6+5	607	6.1	6.8	6.3	7.1	5.3			
i	4.9	5.7	701	5.7	4.9	6.5	6.6	6.6	6.6	6.5			
		37,	797	73 A /	8.7	4.4	4.5	6.3	6.7	6.1			

Line	Stresses in KSI												
	0,2	6.1	6.4	8.2	7,2	8.7	6.2	6.0	0.4	5.1			
260	667	3.4	616			9.5	***	9-1	904	9.0			
	9.0	6.9 8.9	9•1 9•2	4.9 9.7	4.2 4.3	8.7	9.3 9.1	8.6	9.0 9.0	9.0			
	1 4.3	8.7	- 4.1		9.0	9,0		9.0	y.o				
	9.7	8.4	9.5	8.9	9.0	4.9	9.5	7.9	10.1				
	9.1	8.9	4.8	4.9	9.0	9.0	9.6	8.0	9.3				
	7.0	8,7	9.0	8.4	7.4	8.0	V-1	7.0	9.1	-			
	9.1		.0	9.0	9-1	8.7	9.0	8.9	9.1	•			
	9.1	6.7	9.6	8.5	9.2	8.9	9 . 1	8.8	9.1	9.			
	4.0	9.0	4.0	-6:0									
270	9.2	••6	••6	8.6	8.8	8.6	8.7	8.6	8.7				
	8.7	1.6	0.0	6.3	9.0	8.5	8.7	#+ 5	9.0	8.			
	8.6	8.6	8.6	8.6	8.8	8.2	8.8	8.5	8.7	-6.			
	11.6	10.7	10.5	10.7	10.9	10.8	10.8	10.3	12.5	8.			
	18.7	9.6	11.5-	-10.3-		10.7	TO.8-		-10.8	-10.			
	10.8	10.7	11.2	9.3	12.2	10.2	10.9	10.5	11.4	10.			
	11.5	9.6	11.5	10.3	11.5	9.9	11.2	10.7	11.0	10.			
	11.4	10.7	10.7	10.7	11.1	10.7	10.8	10.7	10.8	10.			
_	10.0	10.7	10.9	10.4	11.3	10.5	10.9	10.5	11.3	10.0			
280	11.0	10.1	12.5	0.6	12.3	10.1	11.0	10.8	10.8	10.0			
	11:0	10.7	10.8	Tool	11.0	10.9	11.01	10.6	0.6	10.			
	11.3	10.0	11.2	10.6	11.3	9.8	11.7	9.9	11.9	10.			
	10.0	10.6	11.0	10.2	11.5	10.3	11.1	10.6	10.8	10.			
	11.0	10.6	11.0	10.7	10.8	10.8	10.9	10.7	10.6	10.			
	111.4	9.2	12.2	10.3	10.9	10.6	11.1	10.4	11.5	7.			
	-	9.0	9.1		9.2	9.1		8.7	-10.7-	-			
	10.8	8.2	9.6	6.7	9.4	9.0	9.1	9.0	9.1	1 900			
	9.1	9.0	9.4	7.7	10.4	8.5	9.2	8.9	9.5				
290	9.5	9.0	9.0	9.0	9.0	9.0	9.0	8.8	10.5	701			
	10.4		9.3	8.7	9.2	0,9	9.0	9.0	9.0	₹•6			
	9.0	9.0	9.2		10.0	8.6	9.0		9.4				
	7.4		9.4		9.3		9,2		9:1-				
	11.4	9.0 10.6	9.0 10.6	9.0 10.5	9•1 10•7	9.0 10.6	9.0	9.0 10.2	9.0 .12.3	9.1 8.1			
	12.5	967	1105	10.2	1004	1015	-1007	1016	1007	-101			
	10.6	10.6	11.0	9.2	12.0	10.0	10.7	10.4	11.2	10.4			
	11.3	9.5	11.3	10.2	11.3	5.7	11.0	10.6	10.0	9.1			
	11.2	10.5	10.6	10.6	10.9	13.5	10.7-	10.6	10.6	10.			
300	10.7	10.6	10.7	10.3	11.1	10.4	10.7	10.4	11.1	10.			
700	10.9	7.9	12.3	6.5	12.1	10.0	10.8	10.6	10.6	10.			

TABLE 114. METHODOLOGY DEVELOPMENT TEST PROGRAM, GROUP V, RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST COMPOSITE MISSION, TYPICAL TRANSPORT (CONT)

Test M-93: This table as shown

Line		Stresses in KSI													
	10.0	10.6	10.4	10.4	10.9	10.5	10.9	10.5	10.6						
	12.0	9.1	11.0	10.4	1101	4.7	11.5	908	11.7	10.5					
	11.2	• • •	12.4	10.6	10.8	10.7	10.8	10.8	10.8	10.7					
	11.2	10.7	10.8	10.7	11.2	10.6	11.1	10.4	10.9	10.2					
	11.2	10.2	11.2	10.5	11.3	10.1	11.8	10.6	10.9	10:7					
	11.5	10.5	11.0	10.6	11.0	10.6	11.3	9.4	12.7	9. 1					
	11.1	10.7	10.8	10.7	1100	10.6	10.9	10.7	10.8	10.6					
310	11.6	10.2	11.6	9.9	11.4	10.1	11.0	10.5	15.1	V. 5					
	11.0	9.8	12.8	8.5	12.3	9.8	1.8.1	10.1	10.8	10.8					
	11.1	10.5	1101	10.5	11.0	10.1	11.2	10.4	11.2	10.4					
	11.0	9.9	11.1	10.7	10.9	10.7	10.6	10.8	1.1.0	10.1					
	11.9	10.6	11.0	10.5	11.1	10.6	11.5	9.9	11.7	9.3					
	11.0	10.5	11.0	10.6	11.1	10.5	11.0	10.8	10.6	10.7					
	10.8	10.6	11.2	10.3	11.2	10.2	11.4	10.4	10.9	19.8					
	9.7	8.0	9.7	8.7	9.7	10.5	10.9	10.A	10.8	10.6					
	7.6	7.0	9.0	9.0 -	9.3	9.0	9.5	9.0	9.3	8.3					
200	9.1	9.0	9.2		9.5	8.8	9.1-	9.0	9.1	9.0					
320	9.0	9.0	9.1	8.8	9.3	8.9	9.2	8.9	9.5	8.7					
	4.1	8.6	10.2	7.3	10.0	8.8	9.0	8.9	9.3	8.8					
	4.1	9.0	9.0	9.0	9.1	8.8	9.2	9.0	9.0	6.9					
	9.3	8.5	9.2	8.9	9.3	8.4	9.6	8.9	9.0	9.0					
	4:0	9.0	9.1	8.6	9.4	8.7		8.5	9,7	8.6					
	10.7	19.6	10.8	10.0	11.3	10.1	10.9	10.6	9.0	7.0					
	10,7	10.6	10.6	10.3	12.0	9.1	11.4	10.5	10.6	10.6					
	10.8	10.4	10.8	10.6	10.6	10.6	10.7	10.5	10.6	10.6					
	11.2	9.1	12.0	10.2	10.7	10.4	11.0	10.3	10.8	1000					
	12.7	9.0	11.3	10.4	10.7	10.6	10.7	10.6	11.3	9.0					
330	11.0	7.4	12.2	7.5	71.0	10.4	11.0	10.3	10.6	10.6					
	11.0	10.5	10.6	10.5	11-1	10.0	11.0	10.4	70.8	-10.17					
	11.0	10.1	11.0	10.4	10.8	10.4	11.1	9.3	10.7	10.5					
i	11.3	10.3	10.8	10.5	10.8	10.5	10.7	10.5	12.5	9.0					
	11.6	10.3	11.0	10.8	10.8	10.7	10.9	10.7	10.7	-0.3					
	11.0	9.8	11.3	10.7	10.9	10.5	11.6	9.2	12.4	19.4					
	12.0	10.6	11.5	10.6	10.8	10.7	71.7	9.4		10.1					
ľ	11.0	10.3	10.9	10.6	11.4	10.2	11.0	10.7	11.0	10.17					
	11.0	10.3	10.9	10.7	11.0	10.6	10.9	10.6	10.9	10.4					
40	10.9	10.7	11.8	10.0	11-1	10.6	11.0	10.5	10.9	10.7					
'''	11.6	10.6	10.9	10.5	11.6	9.9	11.0	10.9	11.0	9.9					
	TO:	10.8	10.9	10.3	11.4	10.6	11.3	10.3	11.2	10.5					
	11.0	10.6	10.6	10.7	10.0	10.6	10.9	10.1	11.6	-10.0					
	11.1	10.7	11.6	9.5	11.0	10.5	10.8	10.7	11.2	10.3					
		· · · · ·	10.8	10.8	10.9	10.5	11.2	10.3	10.9	10.7					

Test M-93: This table as shown

Line	Stresses in KSI											
	11.1	10.5	10.0	10.0	10.0	10.5	10.8	10.6	10.9	9.		
	13.7	9.1	11.6	10.1	12.5	9.2	11.5	10.8	10.8	•		
	9.3	8.4	10.7	7.0	10.5	8.5	9.2	9.1	9.1	•		
	9.3	9.0	9.1	P-1	9.3	8.6	9.4	8.9	9.1	<u> </u>		
	9.6	8.3	9.4	8.9	9.5	9.2	9.9	8.3	10.1			
350	9.0	9.0	♥•0		9.9	7.9	9.5	9.0	9.0	9.		
,,,	9.1	8.9	9+1	●•0	9.0	9.0	9.0	9.0	9.0	• • •		
	9.3	7.4	10.0	8.7	9.0	6.9	A.X.	8.8		9 4		
	10.6	7.8	9.4	4.9	••0	9.0	9.0	9.0	9.0 3.1			
	9.2	8.2	10.1	0.2	9.2	8.9	9.2			—-;.		
	10.9	10.5	10.6	10.6	i.s	10.0	10.8	10.0		10		
	11.4	10.0	11.4	9.8	11.3	9.6	11.9	10.0	10.6	10.		
	10.0	7.4	12.5	8.4	12-1	10.0	11.0	10.2	11.1	10.		
	10.9	10.3	10.9	10.3	10.8	10.5	10.6	10.6	10.5	9.		
	11.6	9.0	11.0	10.5	10.7	10.4	11.3	9.8	10.6	10.		
360	11.7	10.4	10.8	10.4	10.9	10.3	10.8	10.6		10		
	10.9	10.4	10.0	10.5	10.9	1.0.1	11.2	10.5	10.6	10		
	10.7	10.4	11.0	10.1	11.1	10.3	10.8	10.6	10.7	-8		
	11.1	10.2	10.6	10.6	10.6	10.5	10.8	10.6	7.8			
	7.2	8.5	6.0	6.5	6.6	0.0	6.6	6 • Z	5.6	6		
	7.9	8.9	7.0	6.2	6.0	6.5	6.6		7.0	6		
	6.6	6.5	6.9	5.5	7.6	6.1	6.7	6.4		5		
	7-1	5.7	7.	6.2	7.1	5.9	5.9	6.5	6.6	•		
	7.0	6.5	6.5	6.5	6.8	6.5	6.6	6.4	4.9			
	6.6	6.5	6.7	6.3	6.9	6.4	6.4		6.6			
370	6.0	6.0	7.6	3.0	7.6	8.1	6.8	6.4	6.6	6		
,,,	6.0	6.5	6.6	6.5	6.7	6.3		5.9	7.2	4.		
	6.7	6 • 1	6.2	6.1	6.2	6.2	6.2	6.7				
	7.4	5.5	6.5		6.4	6.1	6.2	8.9	9.0	9.		
	9.2	8.9	9.0	9.0	9.3	8.6	9.2 9.3	8.1	10.4	7.		
	9.2	8.7	9.2	8.9	9.1	8.9		9-0	9.0			
	9.4	5.5	9.1	8.9	9.1	8.9	9.0		9.9			
	9.1	9.0	9.0	9.0	9.3	8.6	9.1 9.9	8.6 8.6	9.0	9.		
	9.5	8.7	9.5	8.4_	9.4		-					
	7.	8.3	10.4	בַּיּרַ	10.0	9.0	9.0	9.0	9.1			
380	9.2	8.9	9.2	8.8	9+1	8.9	9.4	8.5	9.6	8.		
	9.6	8.5	9.2	9.0	9.0							
	407	0.4	901	-6.4	9.2	8.6	8.7	8.3	10.1	6		
	9.3	8.6	8.7	8.6		8.5	8.7	8.6	8.7			
	10.4	7.8	9.1	8.3	8.9				9.2-			
	10.7		8.9	7,4	9.3	7.8	9.0	8.6	8.0	-8		
	9.3	7.6	9.2	8.3	703	5.8	7.3	5.9	7.4	6		

Line		Stresses in KSI												
	0,0	0.0	4.7	4.1	7+1	4.2	6.0	6 c 5	4.5	4.				
200	6.7	4.4	4.7	8.3	7.6	5.4	7,8	915	0.0	663				
3 9 0	7.0	8.4	7.6	6.5 5.6	6 • 6 4 • 7	6.6	6.6	6·5 6·3	6.6 7.1	4.1 5.1				
	1001		781			6.5	676-	6.6						
	6,9	9.7	7.7	5.7	4.9	6.4	6.8	6.3	4.7	6.				
	4.9	4.5	6.6	6.5	6.9	6.1	6.9	6.4	6.6	6.				
	0.2	661	614	215	742	517	615	610	018	31				
	6.7	5.4	6.6	5.9	6.7	5.5	6.4	6.1	6.4	5.0				
	9-1	8.9	9.1	8.9	9.2	8.7	9.3	8.8	9.0	9.0				
	4.0	8.9	4.5	6.7	9.3		<u> </u>	¥:0	9.0					
400	9.3	8.7	9 .1	9.0	9.0	9.0	9.1	9.0	9.0	8.6				
400	9.7	8.4	9.3	8.9	9.0	8.9	9.5	7.9	10.1	8.6				
	3.1	8.7	9.0	8.9	9.0	8:6	9.6	9.0	9.1	8.0				
	9.1	8.9	9.0	9.0	9.1	8.9	9.0	8.9	9.1	9.0				
		8.7	9.6-		 7 . 2	8.9	9.1		9.1	9.0				
	9.0	9.0	9.0	8.9	9.5	8.4	9.1	9.1	9.1	8.				
	9.2	8.6	8.6	8.6	8.6	8.6	8.7	5.6	8.7	6.6				
	8.7	0.8	8.6	0.3	9.0	W.5	8.7	8.4	9.0	8.4				
	8.9	7.9	10.3	6.8	9.8	4.2		8.6	8.7	8.0				
	A.8	8.6	6.6	8.6	0.0	8.4	8.9	8.5	8.7	-6.4				
410	11.6	10.7	10.0	10.7	10.9	10.6	10.6	10.3		5.4				
	12.7	9.6	11.3	10.3	11.1	10.7	10.6	10.7	10.8	10.				
	10.8	10.7	11.2	10.3	12.2	10.2	10.9	10.5	11.4	10.5				
	11.4	10.7	10.7	10.7	11.5	10.7	10.8	10.7	10.8	10.0				
	10.9	10.7	10.9	10.4	11.3	10.5	10.9	10.7	11.3	10.4				
	11:0-	10.1	72.5		- 12.3-	10.1	11.0	-10.6-	10.8	- 10.6				
	11.0	10.7	10.8	10.8	11.0	10.5	11.1	10.6	10.8	10.7				
	11.3	10.0	11.2	10.6	11.3	9.8	11.7	9.9	11.9	10.				
	10.0	10.8	11.0	10.5	11.5	10.3	11.1	10.8	10.8	10.5				
420	10.8	10.8	10.6	10.4	12.2	9.2	11.6	10.7	10.8	10.7				
	11.0	10.6	11.0	10.7	10.8	10.8	10.9	10.7	10.8	10.7				
	11.4	9.2	1 2 . 2	10:3	1.0.4	10.6	11.1	10.4	11.5	9.1				
	0.0	9.0	9.1	9.0	9.2	9•1	9.1	6.7	10.7	6.6				
	10.8	9.0	9.6	7.7	9.4	9,0	9.1	9.0	9.1	9.0				
	9.5	9.0	9.0	9.0	9.0	9.0	9.0	8.0	10.2	7.2				
	10.4	8.4	9.3	8.7	9.2	8.9	9.0	9.0	9.0	9.0				
	-0.0-	—•. ·	— 7 .2—			:: <u>-</u>			9. 4	8.1				
	9.4	8.2	9.4	8.8	9.4	0.4	9.2	9.0	9.1	8.5				
430	9.4	9.0	9,0	9.0	9.1	9.0	9.0	9.0	9.0	9.0				

Line	Stresses in KSI												
	11.4	10,6	10.6	10.5	10.7	10,6	10.6	10.2	12.3	8.3			
	18.5	7.7	11.5	10.5	10.9	10.5	10.7	10-8	10.7	10.6			
	10.6	10.6	11.0	9.2	12.0	10.0	10.7	10-4	11.2	10.4			
	11.3	9.5	11.3	10.2	11.3	9.7	11.0	10.6	10.6	T0-6			
	11.2	10.5	10.7	10.3	11-1	10.5	10.7	10.4	11.1	10.2			
	10.9	9,9	12.3	8.5	12.1	10.0	10.8	10.6	10.6	10.5			
	10.9	10.6	10.8	10.6	10.9	10.3	10.9	10.5	10.6	10.5			
	liiii	9.8	11.0	10.4	11.1	9.7	11.5	9.8	11.7	-6.4			
440	12.9	9.1	11.5	10.6	10.8	10.7	10.8	10.8	10.8	10.7			
	11.2	9.6	12.4	9.6	-11-2-	10.6		10.4	1.0.4	70.2			
	11.2	10.7	10.5	10.7	11.3	10.1	11.2	10.6	10.9	19.7			
	11.2	10.2	11.2	10.5	11.0	10.6	11.3	9.4	12.7	9.1			
	111.5	10.5	11.00	10.0	11.0	10.8	10.4	10.7	10.8	10.6			
	11.1	10.5	11.1	10.5	11.0	10.7	10.8	10.4	11.0	10+1			
	11.6	10.2	11.6	9.9	11.4	9.8	12.1	10.1	10.8	10.6			
	111.0_	9.6	12.0	6.5	12.3	10.1		10.4	11.2	10.4			
	11-1	10.7	10.8	10.7	11.4	10.1	11.0	10.5	12.1	9.5			
	11.8	9.0	11.1	10.7	10.9	10.6	11.5	9.9	11.7	9.3			
450	11.0	10.5	11.0	10.5	1101	10.5	11.4	10.4	10.9	10.8			
	10.8	10.6	11.2	10.3	11.2	10.5	10.9	10.8	10.8	10.6			
	70.7			5.7-		8.3-	9.5	9•(f	9.3				
	4.6	9.0	9.0	9.0	9.3	9.0	9.1	9.0	9.1	9.0			
	9.1	9.0	9.2	6.8	9.5	8.8	9.2	8.9	9.5	8.7			
	4.0	9.0	4.1	0.0	9.3	5.9	9.0	8.4	9,3	6.0			
	9.1	6.6	10.2	7.3	10.0	5.6	9.1	9.0	9.0	8.9			
	9.1	9.0	9.0	9.0	9.1	8.8	9.2	8.9	9.0	9.0			
	4.3	8.5	9.5	6.9	9.3	8.4	9.6	8.5	9.7	8.6			
460	9.0	9.0	9 • 1	8.6	9.4	8.7	9.1	9.0	9.0	9.0			
	10.7	10.6	10.8	10.0	11.3	10.1	10.9	10.6	10.6	10.6			
	10.7	10.6	10.6	10.3	18.0	9.1	1104	10.5	10.6	10.6			
	10.8	10.4	10.8	10.6	10.6	10.6	10.7	10.5	10.6	10.6			
	11.2	9.1	12.0	10.2	10.7	10.4	11.0	10.3	11.3	9.0			
	115.7	9.4	12.2	9.5	10.7	10.6	11.0	10.6	10.8	10.1			
	11.0	10.5	10.6	10.5	11.0	10.0	11.0	10+4	10.5	10.5			
	11:0	10.5	11.0	-1044	-10.6	-10:4							
	11.3	10.3	10.8	10.5	10.8	10.5	10.7	10.6	10.7	10.4			
470	111.3	10.3	11.0	10.8	10.8	10.7	10.9	10.7	10.8	-6.4			
	11.0	7.8	11.3	10.7	10.9	10.5	11.6	9.2	12.4	-10.r			
	11.0	10.6	11.2	10.6	10.8	10.7	11.7	9.4	11.3	10-1			
	12.0	10.3	10.9	10.6	11.4	10.2	11.0	10.7	11.0	10.4			

Line	Stresses in KSI												
	11.0	10.7	10.9	10.7	11.0	10.6	10.9	10.6	10.9	10.7			
	11.0	10.3	11.8	10.0	11.1	10.6	11.0	1002	10.9	10.			
	10.0	10.7	10.9	10.5	11.6	9.9	11.0	10.9	11.0	9.9			
	11.6	10.6	10.9 10.8	10.7	11.4	10.6	11.3	10.3	11.2	10.5			
	11.0	10.6	11.6	9.5	11.8	10.5	10.9	10.7	11.8	10.0			
480	liiii	10.7	10.8	10.8	10.9	10.5	11.2	10.7	11.2	10.3			
700_	+	10.5	10.8	10.8	10.0	10.5	10.8	10.8	10.9	9.6			
	12.7	9.1	11.6	10.1	12.2	9.2	11.5	10.8	10.8	9.5			
	9.3	8.4	10.7	7.0	10.5	8.5	9.2	9.1	9.1	8.9			
	4.3	9.0		9.1	9.3	5.5	9.4-	8.9	9.1	9.0			
	9.6	8.3	9.4	8.9	9.5	8.2	9.9	8.3	10-1	8.5			
	9.0	9.0	9.0	8.8	9.9	7.9	9.5	9.0	9.0	9.0			
	9.1	9.4	4.1	9.0	9.0	9.0	4.0	9.0	9.0	9.0			
	9.3	7.9	10.0	8.7	9.0	8.9	9.2	8.8	9.4	7.6			
	10.6	7.8	9.4	8.9	9.0	9.0	9.0	9.0	9.0	9.0			
490	10.9	10.5	10.6	10.6	9.2	8.9	9.2		9.1				
	11.4	10.0	11.4	9.8	11.2	10.0	10.8	10.0 10.0	11.9	9.3 10.6			
	10.8	9,6	12.5	844	1201	10.0	11.0	10.5	11.1	10.2			
	10.9	10.3	10.9	10.3	10.8	10.5	10.6	10.6	10.8	10.0			
	11.6	9.8	11.0	10.5	10.7	10.4	11.3	9.8	11.5	9.2			
	11.7	10.4	10.8	10.4	70.9	10.3	-10.8	10.6	-10.6-	-10.5			
	10.9	10.4	10.8	10.5	10.9	10.1	11.2	10.2	10.7	10.6			
	10.7	10.4	11.0	10.1	11-1	10.3	10.8	10.6	10.6	10.5			
	11.1	10.5	10.8	10+6	1099	1012	1018	1016	10.7	-819			
500	7.2	6.5	6.6	6.5	5.6	6.6	6.6	6.2	7.8	4.9			
	7.9	5.9	7.0	6.2	6.8	6.5	6.6	6.5	6.6	6.5			
	6.6	5.5	6.9	3.5	7.6	6.1	6.7	6.4	7.0	6.3			
	7.1	5.7	7-1	6.2	7-1	5.9	6.9	6.5	6.7	5.?			
	7.0	6.5 6.5	6.5	6.5	6.8	6.5	6.6	6.5	6.6	6.5			
	6.8	6.0	7.8	5.0	7.6	6.1	6.7	6.6	6.6	6.4			
	6.8	6.5	6.6	6.5	6.7	6.3	6.8	6.4	6.6	6.5			
	6.7	6	6: <i>2</i>	6:1		6.2	6.2		7 .2				
	7.4	5.5	6.5	5.9	6.4	6.1	6.2	6.1	6.2	6.1			
510	9.2	6.9	9.0	9.0	9.3	8.6	9.2	8.9	9.0	9.0			
	7:2	8.7		8.9	9+1	6.9	9.3	8.1	10.4	70 (
	9.4	8.0	9.1	8.9	9+1	6.9	9.0	9.0	9.0	8.9			
	9.1	9.0	9.0	9.0	9.3	8.6	9.1	8.6	9.9	8 . 1			
	7.5	8.7	9.5	8.4	9.4	8.4	-9.9	8.6	9.0	9.0			
	9.1	8.3	10.4	7.3	10.0	8.6	9.2	8.0	9.3	8.8			
	9,2	8,9	9.2	8.8	9.1	9.0	9.0	9.0	9 e t	6.6			

TABLE 114. METHODOLOGY DEVELOPMENT TEST PROGRAM, GROUP V, RANDOM FLIGHT-BY-FLIGHT SPECTRUM LOADING TEST COMPOSITE MISSION, TYPICAL TRANSPORT (CONCL)

Test M-93: This table as shown

Line	Stresses in KSI												
	9.6	0.5	9.2	9.0	9.0	5.9	9.4	6.5	9.6	8.0			
	7.7	3.4	9.1	8.9	9.2	8.6	8,7	9.0	9.0	6.5			
520	10.4	8.6 7.8	8 • 7 9 • 1	8.6 8.3	8•7 8•9	8.5	8.7	5.6	10-1	8.6			
220	+ 0.7	-8.6	8.9	7.4	10.0	8.1	5.7		9.2-	8.4			
	9.3	7.6	9.2	8.3	9.3	7.8	9.0	8.6	8.6	-8.9			
	7.0	5.9	6.9	6.4	6.9	5.8	7.3	5.9	7.4	6.0			
	0.0	6.6	6.7	0.1	701	6.2	6.6	6.5	6.5	6.5			
	6.6	6 • 6	6.6	6.3	7.6	5.4	7,2	6.5	6.6	6.5			
	6.7	6.4	6.7	6.5	6.6	6.6	6.6	6.5	6.6 7:1-	6.5 5.3			
	8.1	5.4	7.6 7.1	6.4	6.6	6.5	6.6	5.6	6.6	6.5			
	6.9	5.7	7.7	5.7	6.9	6.4	6.8	6.3	6.7	6.1			
530	6.9	80.7	5.6	6.5	9.9	8.1		5.4	6.8	505			
5 50	6.2	6 - 1	6.4	5.2	7.2	5.7	6.2	6.0	6.6	5.9			
	6.7	5-4	6.6	5.9	6.7	5.5	6.4	6-1	6.4	5.6			
	7-9.1	8:9-	9 • I	8.9	9 . 2	8.7	9.3	8.6	9.0	9.0			
	9.0	8.9	9.2	8.7	9.3	8.8	9.1	9.0	9.0	8.9			
	9.3	8.7	9.1	9.0	9.0	9.0	9.1	9.0	9.0	9.6			
	9.1	8.9	9.3	8.9	9.0	9.0	9.6	8.0	9.3	8.6			
	9.8	8.7	9.0	8.9	9.4	8.6	9.1	9.0	9.1	8.8			
		8.9	9.0		9.1-	8.9	9.0	8.9	9.1	9.0			
540	9-1	8.7	9.6	8.5	9.2	8.9	9.1	6.8	9.1	9.0			
J 10	■.0	9.0	9.0	8.9	9.5	8.4	9.1	9.1	9.1	8.4			
	3.5	8.6	8.6	8.6	5.8	0.6	8.7	8.6	8.7	8.6			
	9.7	8.6	8.8	8.3	9.0	8.5	8.7	8 • 4	9.0	8.4			
	10.9	7.9	10.3	6.8	9.8	8.2	6.8	8.6	8.7	-11.5			
	11.9	5.6	9.5	8.5	10.9	9.4	9.6	8.7	9,9	5.0 6.9			
	13.2	6•6 6•8	11.4 7.6	7•4 6•8	8.2	5.4 7.5	7.7	5.9	10.4	4.0			
	9.5	8.9	9.1	-8.7	9.4	8.9	V.3	8.7	9.2	8.9			
	9.0	9.0	9.0	9.0	9.0	9.0	9.1	8.6	9.7	8.5			
550	9.1	8.9	9.5	8.2	9.6	8.9	9.0	9.0	9.2	8.7			
	9:1-	-0:0-	9.0	9.0	9.0	8.9	9.2	8.8	9 • 1·	8.4			
	9.2	8.9	9.0	9.0	9.0	5.9	9.0	9.0	9.0	8.4			
	10.4	7.8	9.5	8.6	9.9	7.9	9.4	9.0	9.0	9.5			
	11.55	8.9	9.6	7.6	10.7	7.6	9.7	3.7	9.0	8.6			
	9.8	8.5	9.2	7.0 8.9	9.1	9.0	9.0	8.8	7.0				
	12.8-					- 10.3 -	10.6		13.8	6.1			
	14.0	7.6	12.3	8.4	11.9	9.3	10.9	9.6	10.8	9.8			

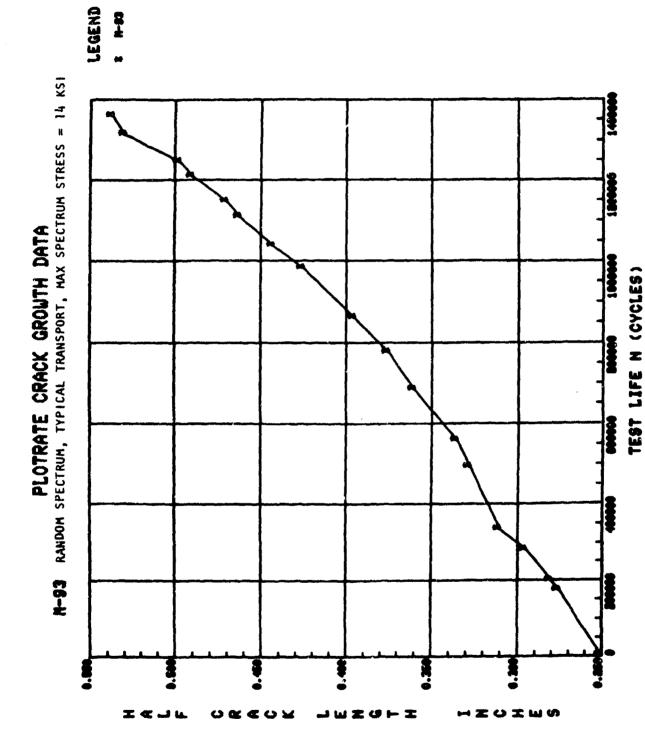
DATA TABULATION FOR TEST M-93 TABLE 115.

2.712E-07 1.244E-07 1-6346-07 1.579E-07 ..854F-07 2.375F-07 3.074F-07 3.165E-07 1.7885-07 -657E-07 . 588E-07 1.625E-07 2-134E-07 2.622E-07 2.703E-07 2.993F-07 3.241F-07 DELTA K 13.59 14.26 14.44 14.80 15.01 15.83 16.32 16.75 17.19 19.48 19.95 20.24 8.84 8.21 8.64 19.54 6.00 HZ. 11.13 11.39 11.52 11.76 11.91 12.19 K-HAX RANDOM SPECTRUM, TYPICAL TRANSPORT, MAX SPECTRUM STRESS = 14 KSI H TEST FRED COEFF 0.999036 0.999031 0.999175 0.998301 0.999143 0.998565 0.992619 0.991254 MULI, CORR, C 106866.0 0.990058 0.989765 0.990822 0.986884 **988674** 0.993863 AN # 0.0 = 6.000 IA. AIREGRESSIONS 0.550 0.550 0.554 0.552 0.675 0.715 0.715 0.850 0.922 0.923 1.002 AMBIENT AIR A ! MEA SURED! 0.550 0.560 0.750 0.850 0.655 0.670 0.925 0.940 1.060 0.500 0.620 0.995 0.250 IN. PMAX = ENVIRONMENT CONDITION: Ħ H-93 ص 1108137. CYCL ES 173380. 198193. 281790. 335088. 491969. 558000. 682690. 775550. 860629. 980335. 037066 208901. 246536. 313740. SPECIMEN NO.: SPECIMEN PHIR = 454-86

2-508E-07

1359024.

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Figure 111. Crack growth curve for test M-93.

TABLE 116. DATA TABULATION FOR TEST M-94

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S = 19.6 KS1
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, MAX SPECTRUM STRESS
RUM
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RANDOM SPECTRUM
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PECIMEN NO.
SPECIMEN N
EC I
25

AN = 0.0 IN.	TEST FRE0 = 6.00 H7.
h = 6.000 IN.	
8 = 0.250 IN.	PMAX =
CCI SPECIMEN	PRIN .

ENY IRONAENT	WIRDNAENT CONDITION:	AMBIENT AIR					
- 1	CYCL ES	AI MEA SURED!	AIREGRESSION	MULT. CORR. COEFF	K-MAX	DELTA K	DA/DN
		0.515	0.516	0.996742	18.11	21.98	4.437F-03
7		0.565	0.556	0.996031	12.27	22.84	3-730F-07
m		0.605	0.603	0.992595	12.80	23.82	3-8725-07
*		0.650	0.656	0.992480	13.36	24.85	4-424F-07
ĸ		0.700	0.708	169266-0	13.89	25.85	5.586F-07
•		0.750	0.749	0.998112	14.31	26.63	7.001F-07

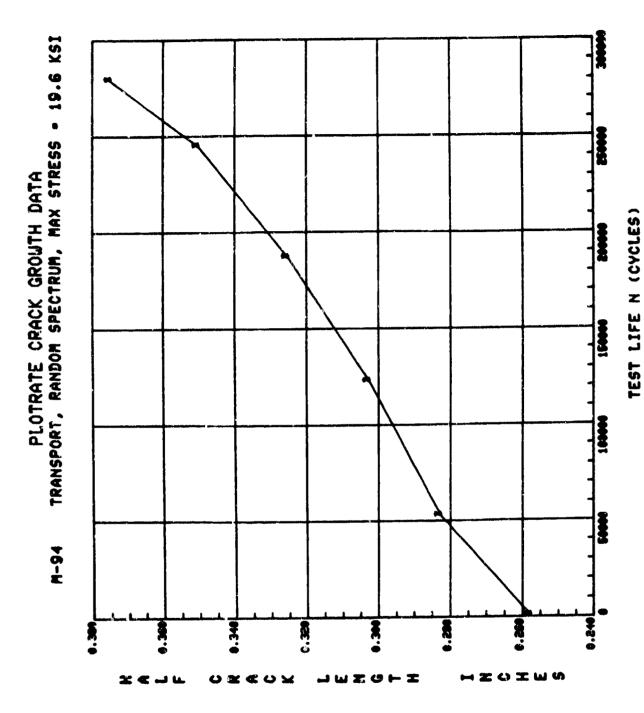


Figure 112. Crack growth curve for test M-94.